

REPORT NO. 207-KAR-03-004

**SAFETY COMPLIANCE TESTING  
FOR FMVSS 207**

**SEATING SYSTEMS**

2003 Honda  
CIVIC DX  
4 DOOR SEDAN

NHTSA NO. C35303

PREPARED BY:  
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AUGUST 19, 2003

FINAL REPORT

PREPARED FOR:  
U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
SAFETY ASSURANCE  
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WASHINGTON, D.C. 20590

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## TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1	Purpose of Compliance Test	1
2	Compliance Test Procedure and Data Summary	2
3	Compliance Test Data	4
4	Noncompliance Data (if applicable)	--

## Appendix

A	Photographs
B	Data Plots
C	Test Equipment List and Calibration Information

## LIST OF DATA SHEETS

<u>Data Sheet</u>		<u>Page</u>
1	Test Vehicle Receiving Inspection	5
2	Seating System Test Results	6
3	Seat Back Angles	9
4	Report of Vehicle Condition at the Completion of Testing	10



# LIST OF PHOTOGRAPHS

<u>Figure</u>		<u>Page</u>
A-1	Left Front, as Received	A-1
A-2	Left Side, as Received	A-2
A-3	Right Rear, as Received	A-3
A-4	Right Side, as Received	A-4
A-5	Vehicle Certification Label	A-5
A-6	Vehicle Tire Label	A-6
A-7	Vehicle Mounted in Test Fixture	A-7
A-8	Vehicle Restrained in Test Fixture	A-8
A-9	Vehicle Mounted in Test Fixture	A-9
A-10	Vehicle Mounted in Test Fixture	A-10
A-11	Aft Moment on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-11
A-12	Aft Moment on Seat Frame and Adjusters, Driver's Side, Post-Test	A-12
A-13	Aft Moment on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-13
A-14	Aft Moment on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-14
A-15	Aft Moment on Seat Frame and Adjusters, Driver's Side Rear, Pre-Test	A-15
A-16	Aft Moment on Seat Frame and Adjusters, Driver's Side Rear, Post-Test	A-16
A-17	Aft Moment on Seat Frame and Adjusters, Passenger's Side Rear, Pre-Test	A-17
A-18	Aft Moment on Seat Frame and Adjusters, Passenger's Side Rear, Post-Test	A-18
A-19	Aft Load on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-19
A-20	Aft Load on Seat Frame and Adjusters, Driver's Side, Post-Test	A-20
A-21	Aft Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-21
A-22	Aft Load on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-22
A-23	Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-23
A-24	Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test	A-24
A-25	Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-25
A-26	Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-26
A-27	207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-27
A-28	207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test	A-28
A-29	207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test	A-29
A-30	207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test	A-30
A-31	207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-31
A-32	207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-32

# LIST OF PHOTOGRAPHS (continued)

<u>Figure</u>		<u>Page</u>
A-33	207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test	A-33
A-34	207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test	A-34
A-35	Aft Load on Seat Frame and Adjusters, Driver's Side Rear, Pre-Test	A-35
A-36	Aft Load on Seat Frame and Adjusters, Driver's Side Rear, Post-Test	A-36
A-37	Forward Load on Seat Frame and Adjusters, Passenger's Side Rear, Pre-Test	A-37
A-38	Forward Load on Seat Frame and Adjusters, Passenger's Side Rear, Post-Test	A-38
A-39	Forward Load on Seat Frame and Adjusters, Driver's Side Rear, Pre-Test	A-39
A-40	Forward Load on Seat Frame and Adjusters, Driver's Side Rear, Post-Test	A-40
A-41	Forward Load on Seat Frame and Adjusters, Driver's Side Rear, Pre-Test	A-41
A-42	Forward Load on Seat Frame and Adjusters, Driver's Side Rear, Post-Test	A-42
A-43	Floor Pan Anchors, Left Front Seat Overall, Pre-Test	A-43
A-44	Floor Pan Anchors, Left Front Seat Overall, Post-Test	A-44
A-45	Seat Anchors, Left Front Seat Overall, Pre-Test	A-45
A-46	Seat Anchors, Left Front Seat Overall, Post-Test	A-46
A-47	Floor Pan Anchor, Left Front Seat, Pre-Test	A-47
A-48	Floor Pan Anchor, Left Front Seat, Post-Test	A-48
A-49	Seat Anchor, Left Front Seat, Pre-Test	A-49
A-50	Seat Anchor, Left Front Seat, Post-Test	A-50
A-51	Floor Pan Anchor, Left Front Seat, Pre-Test	A-51
A-52	Floor Pan Anchor, Left Front, Seat, Post-Test	A-52
A-53	Seat Anchor, Left Front Seat, Pre-Test	A-53
A-54	Seat Anchor, Left Front Seat, Post-Test	A-54
A-55	Floor Pan Anchor, Left Front Seat, Pre-Test	A-55
A-56	Floor Pan Anchor, Left Front Seat, Post-Test	A-56
A-57	Seat Anchor, Left Front Seat, Pre-Test	A-57
A-58	Seat Anchor, Left Front Seat, Post-Test	A-58
A-59	Floor Pan Anchor, Left Front Set, Pre-Test	A-59
A-60	Floor Pan Anchor, Left Front Set, Post-Test	A-60
A-61	Seat Anchor, Left Front Seat, Pre-Test	A-61
A-62	Seat Anchor, Left Front Seat, Post Test	A-62
A-63	Floor Pan Anchors, Right Front Seat Overall, Pre-Test	A-63
A-64	Floor Pan Anchors, Right Front Seat Overall, Post-Test	A-64

# LIST OF PHOTOGRAPHS (continued)

<u>Figure</u>		<u>Page</u>
A-65	Seat Anchors, Right Front Seat Overall, Pre-Test	A-65
A-66	Seat Anchors, Right Front Seat Overall, Post-Test	A-66
A-67	Floor Pan Anchor, Right Front Seat, Pre-Test	A-67
A-68	Floor Pan Anchor, Right Front Seat, Post-Test	A-68
A-69	Seat Anchor, Right Front Seat, Pre-Test	A-69
A-70	Seat Anchor, Right Front Seat, Post-Test	A-70
A-71	Floor Pan Anchor, Right Front Seat, Pre-Test	A-71
A-72	Floor Pan Anchor, Right Front Seat, Post-Test	A-72
A-73	Seat Anchor, Right Front Seat, Pre-Test	A-73
A-74	Seat Anchor, Right Front Seat, Post-Test	A-74
A-75	Floor Pan Anchor, Right Front Seat, Pre-Test	A-75
A-76	Floor Pan Anchor, Right Front Seat, Post-Test	A-76
A-77	Seat Anchor, Right Front Seat, Pre-Test	A-77
A-78	Seat Anchor, Right Front Seat, Post-Test	A-78
A-79	Floor Pan Anchor, Right Front Seat, Pre-Test	A-79
A-80	Floor Pan Anchor, Right Front Seat, Post-Test	A-80
A-81	Seat Anchor, Right Front Seat, Pre-Test	A-81
A-82	Seat Anchor, Right Front Seat, Post-Test	A-82
A-83	Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Pre-Test	A-83
A-84	Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Post-Test	A-84
A-85	Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Pre-Test	A-85
A-86	Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Post-Test	A-86
A-87	Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Pre-Test	A-87
A-88	Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Post-Test	A-88
A-89	Seat Anchor, Rear Seat, Seat Cushion, Pre-Test	A-89
A-90	Seat Anchor, Rear Seat, Seat Cushion, Post-Test	A-90
A-91	Floor Pan Anchor, Rear Seat, Seat Cushion, Pre-Test	A-91
A-92	Floor Pan Anchor, Rear Seat, Seat Cushion, Post-Test	A-92
A-93	Seat Anchor, Rear Seat, Seat Cushion, Pre-Test	A-93

# LIST OF PHOTOGRAPHS (continued)

<u>Figure</u>		<u>Page</u>
A-94	Seat Anchor, Rear Seat, Seat Cushion, Post-Test	A-94
A-95	Floor Pan Anchor, Rear Seat, Seat Cushion, Pre-Test	A-95
A-96	Floor Pan Anchor, Rear Seat, Seat Cushion, Post-Test	A-96
A-97	Seat Anchor, Rear Seat, Seat Cushion, Pre-Test	A-97
A-98	Seat Anchor, Rear Seat, Seat Cushion, Post-Test	A-98
A-99	Floor Pan Anchors, Left Rear Seat, Seat Back Overall, Pre-Test	A-99
A-100	Floor Pan Anchors, Left Rear Seat, Seat Back Overall, Post-Test	A-100
A-101	Seat Anchors, Rear Seat, Seat Back Overall, Pre-Test	A-101
A-102	Seat Anchors, Rear Seat, Seat Back Overall, Post-Test	A-102
A-103	Floor Pan Anchor, Left Rear Seat, Seat Back, Pre-Test	A-103
A-104	Floor Pan Anchor, Left Rear Seat, Seat Back, Post-Test	A-104
A-105	Seat Anchor, Left Rear Seat, Seat Back, Pre-Test	A-105
A-106	Seat Anchor, Left Rear Seat, Seat Back, Post-Test	A-106
A-107	Floor Pan Anchor, Left Rear Seat, Seat Back, Pre-Test	A-107
A-108	Floor Pan Anchor, Left Rear Seat, Seat Back, Post-Test	A-108
A-109	Seat Anchor, Left Rear Seat, Seat Back, Pre-Test	A-109
A-110	Seat Anchor, Left Rear Seat, Seat Back, Post-Test	A-110
A-111	Floor Pan Anchor, Left Rear Seat, Seat Back, Pre-Test	A-111
A-112	Floor Pan Anchor, Left Rear Seat, Seat Back, Post-Test	A-112
A-113	Seat Anchor, Left Rear Seat, Seat Back, Pre-Test	A-113
A-114	Seat Anchor, Left Rear Seat, Seat Back, Post-Test	A-114
A-115	Floor Pan Anchors, Right Rear Seat, Seat Back Overall, Pre-Test	A-115
A-116	Floor Pan Anchors, Right Rear Seat, Seat Back Overall, Post-Test	A-116
A-117	Seat Anchors, Right Rear Seat, Seat Back Overall, Pre-Test	A-117
A-118	Seat Anchors, Right Rear Seat, Seat Back Overall, Post-Test	A-118
A-119	Floor Pan Anchor, Right Rear Seat, Seat Back, Pre-Test	A-119
A-120	Floor Pan Anchor, Right Rear Seat, Seat Back, Post-Test	A-120
A-121	Seat Anchor, Right Rear Seat, Seat Back, Pre-Test	A-121
A-122	Seat Anchor, Right Rear Seat, Seat Back, Post-Test	A-122
A-123	Floor Pan Anchor, Right Rear Seat, Seat Back, Pre-Test	A-123
A-124	Floor Pan Anchor, Right Rear Seat, Seat Back, Post-Test	A-124

# LIST OF PHOTOGRAPHS (continued)

<u>Figure</u>		<u>Page</u>
A-125	Seat Anchor, Rear Seat, Seat Back, Pre-Test	A-125
A-126	Seat Anchor, Rear Seat, Seat Back, Post-Test	A-126
A-127	Floor Pan Anchor, Right Rear Seat, Seat Cushion, Pre-Test	A-127
A-128	Floor Pan Anchor, Right Rear Seat, Seat Cushion, Post-Test	A-128
A-129	Seat Anchor, Right Rear Seat, Seat Back, Pre-Test	A-129
A-130	Seat Anchor, Right Rear Seat, Seat Back, Post-Test	A-130

# LIST OF DATA PLOTS

<u>Data Plot</u>		<u>Page</u>
B-1	Driver Upper X-Member	B-1
B-1	Passenger Upper X-Member	B-1
B-2	Driver Seat Assembly	B-2
B-2	Passenger Seat Assembly	B-2
B-3	Driver Seat Assembly	B-3
B-3	Passenger Seat Assembly	B-3
B-4	Driver Lap Belt Force/Driver Shoulder Belt Force	B-4
B-4	Passenger Lap Belt Force/Passenger Shoulder Belt Force	B-4
B-5	Driver Seat Force	B-5
B-5	Passenger Seat Force	B-5
B-6	Left Rear Passenger Seat Back	B-6
B-6	Right Rear Passenger Seat Back	B-6
B-7	Left Rear Passenger Seat Back / Right Rear Passenger Seat Back	B-7
B-7	Center Rear Passenger Seat Cushion	B-7
B-8	Left Rear Passenger Seat Back / Right Rear Passenger Seat Back	B-8
B-8	Center Rear Passenger Seat Cushion	B-8

SECTION 1  
PURPOSE OF COMPLIANCE TEST

## **1. PURPOSE OF COMPLIANCE TEST**

Tests were conducted on a 2003 Honda Civic DX4 Door Sedan, manufactured by HONDA Motor Company, to determine compliance with FMVSS 207, "Seating Systems". The purpose of this standard is to reduce the number of deaths and injuries that may be caused by the failure of seats, their attachment hardware, and their installation when said failure results from the forces on the seat in a vehicle impact.

All tests were conducted based on the current National Highway Traffic Safety Administration (NHTSA), Office of Vehicle Safety Compliance (OVSC) Laboratory Procedures, TP-207-09, dated June 18, 1992, and corresponding KARCO Engineering, LLC test procedure KTP-207, dated August 2, 2003. Detailed procedures for receiving, inspecting, testing and reporting of test results are described in the test procedures and are not repeated in this report.

This report is organized in sections containing pertinent test information and data tables as follows:

- Section 2 - Compliance Test Procedure and Data Summary
- Section 3 - Compliance Test Data
- Section 4 - Noncompliance Data (if applicable)
- Appendix A - Photographs
- Appendix B - Data Plots
- Appendix C - Test Equipment List and Calibration Information

**SECTION 2**  
**COMPLIANCE TEST PROCEDURE and DATA SUMMARY**



## 2. COMPLIANCE TEST PROCEDURE AND DATA SUMMARY

A 2003 Honda Civic DX4 Door Sedan was subjected to FMVSS 207 compliance testing on August 18, 2003 thru August 21, 2003. All tests were conducted at KARCO Engineering, LLC in Adelanto, California. Summary data is shown on Data Sheet No. 2. The following tests were performed:

- Receiving inspection
- Aft moment tests on front seat backs
- Aft load tests on front seat frames and adjusters
- Forward load tests on front seat frames and adjusters
- Aft moment tests on rear seat backs
- Aft load tests on rear seat cushions and seat backs
- Forward load tests on rear seat cushions and seat backs

The tests were conducted per the FMVSS 207 test procedure. The significant aspects of the test procedure are described in the following paragraphs.

2.1 Test Vehicle Inspection. The test vehicle was inspected to verify that all seat, restraint systems and seat belt assembly anchorage systems are complete and the seat adjusting mechanisms are working properly.

2.2 Test Vehicle Preparation and Pre-test Measurements. The test vehicle was securely mounted to the test fixture and connected to the appropriate number of hydraulic actuators. Lateral spacing of the individual seat anchorages were measured and all other angular and dimensional measurements were verified to be in compliance with the requirements of the subject safety standards. The components were weighed and their centers of gravity determined.

### 2.3 Static Load Tests-General Performance Requirements.

When tested in accordance with S5, each occupant seat, other than a side-facing seat or a passenger seat on a bus, shall withstand the following forces:

- (a) In any position to which it can be adjusted -- 20 times the weight of the seat applied in a forward longitudinal direction;

(Continued on next page)

**2.... (Continued)**

- (b) In any position to which it can be adjusted — 20 times the weight of the seat applied in a rearward longitudinal direction;
- (c) For a seat belt assembly attached to the seat — the force specified in subparagraph (a), if it is a forward facing seat, or subparagraph (b), if it is a rearward facing seat, in each case applied simultaneously with the forces imposed on the seat by the seat belt assembly when it is loaded in accordance with section S4.2 of Federal Motor Vehicle Safety Standard No. 210; and
- (d) In its rearmost position — a force that produces a 3,300 inch-pound moment about the seating reference point (SRP) for each designated seating position (DSP) that the seat provides, applied to the upper cross-member of the seat back or the upper seat back, in a rearward longitudinal direction for forward-facing seats and in a forward longitudinal direction for rearward-facing seats.
- (e) To meet FMVSS 210 requirements, the anchorages, attachment hardware, and attachment bolts for all Type 2 and automatic seat belt assemblies that are installed to comply with Standard No. 208 (49 CFR 571.208) shall withstand 3,000-pound forces when tested in accordance with S5.2.

SECTION 3  
COMPLIANCE TEST DATA

### **3. COMPLIANCE TEST DATA**

The results of FMVSS 207 compliance tests that were conducted on the 2003 Honda Civic DX 4 Door Sedan on August 19, 2003 to determine compliance with FMVSS 207, "Seating Systems" is presented in this section. No performance failures were identified for the vehicle tested.

**DATA SHEET NO. 1**  
**TEST VEHICLE RECEIVING INSPECTION**

VEHICLE			
YEAR	2003	MAKE	HONDA
MODEL	CIVIC DX	BODY STYLE	4 DOOR SEDAN
NHTSA NO.	C35303	VIN	2HGES15163H510524
BUILD DATE	10/02	TEST DATE	08/18/03
TEST LABORATORY	KARCO ENGINEERING, L.L.C.		

1. First compliance test by laboratory for this vehicle is S207 test.

	Yes	<input checked="" type="checkbox"/> No (Go to item 2)
<input checked="" type="checkbox"/> 1.1	Label test vehicle with NHTSA Number	
<input checked="" type="checkbox"/> 1.2	Verify all options on the "window sticker" are present on the vehicle	
<input checked="" type="checkbox"/> 1.3	Verify tires and wheel rims are new and the same as listed	
<input checked="" type="checkbox"/> 1.4	Verify there are no dents or other interior or exterior flaws	
<input checked="" type="checkbox"/> 1.5	Verify the glove box contains an owner's manual, warranty document, consumer information, and extra keys	
<input checked="" type="checkbox"/> 1.6	Verify the vehicle is equipped with the proper fuel filter cap	
<input checked="" type="checkbox"/> 1.7	If the vehicle has been delivered from the dealer, verify the vehicle has been properly prepared and is in running condition	

2. Verify seat adjusters are working

☒ Yes ☐ No

3. Verify there is a seat belt at each seating position

☒ Yes ☐ No

4. Without disturbing the integrity of each seat belt and anchorage, verify that each seat belt is attached to the anchorage. For seat belts that are attached to the seat, also verify the seats are attached to the seat anchors and the seat anchors are attached to the vehicle.

☒ Yes ☐ No

**RESULTS OR RECEIVING INSPECTION:**

PASS -- ☒  
 FAIL -- ☐  
 CONDITIONAL -- ☐

**REMARKS:**

RECORDED BY: MARK A. KRATZKE DATE: 08/18/03

APPROVED BY: MATTHEW A. IVORY DATE: 08/18/03

**DATA SHEET NO. 2**  
**SEATING SYSTEM TEST RESULTS**

VEHICLE			
YEAR	2003	MAKE	HONDA
MODEL	CIVIC DX	BODY STYLE	4 DOOR SEDAN
NHTSA NO.	C35303	VIN	2HGES15163H510524
BUILD DATE	10/02	TEST DATE	08/19/03
TEST LABORATORY	KARCO ENGINEERING, L.L.C.		

LEGEND:     Wa - Weight of Seat Assembly  
               Wb - Weight of Seat Back  
               Wc - Weight of Seat Cushion  
               Z - Distance from Seat SRP to Uppermost Crossmember = 18.0 "

**FOR FRONT BUCKET SEATS - - LEFT SIDE**

COMPONENT	LOAD DIRECTION	COMPONENT WEIGHT (lbs)	REQUIRED LOAD (lbs)	ACTUAL LOAD (lbs)	PEAK MOMENT (in-lbs)	ATTACHMENT (PASS/FAIL)
Seat Back	Forward	Wb = 12	20 x Wb = 240	N/A	N/A	N/A
Seat Assy.	Forward	Wa = 36	20 x Wa = 720	718.3	N/A	PASS
	Rearward	Wa = 36	20 x Wa = 720	718.1	N/A	PASS
Seat Back Moment	Rearward	N/A	3275 in-lb/Z	178.6	3214.8	PASS

**FOR FRONT BUCKET SEATS - - RIGHT SIDE**

COMPONENT	LOAD DIRECTION	COMPONENT WEIGHT (lbs)	REQUIRED LOAD (lbs)	ACTUAL LOAD (lbs)	PEAK MOMENT (in-lbs)	ATTACHMENT (PASS/FAIL)
Seat Back	Forward	Wb = 12	20 x Wb = 240	N/A	N/A	N/A
Seat Assy.	Forward	Wa = 34	20 x Wa = 680	677.8	N/A	PASS
	Rearward	Wa = 34	20 x Wa = 680	672.4	N/A	PASS
Seat Back Moment	Rearward	N/A	3275 in-lb/Z	178.4	3211.2	PASS

(Continued on next page)

# **DATA SHEET NO. 2... Continued**

## **FOR FRONT BUCKET SEATS - - COMBINED**

COMPONENT	LOAD DIRECTION	COMPONENT WEIGHT (lbs)	REQUIRED LOAD (lbs)	ACTUAL LOAD (lbs)	ATTACHMENT (PASS/FAIL)
Driver Lap Belt	Forward	N/A	3,000 lbs, -10, -50	<b>2989.9</b>	<b>PASS</b>
Driver Shoulder Belt	Forward	N/A	3,000 lbs, -10, -50	<b>2989.2</b>	<b>PASS</b>
Center Lap Belt	Forward	N/A	5,000 lbs, -10, -50	<b>N/A</b>	<b>N/A</b>
Passenger Lap Belt	Forward	N/A	3,000 lbs, -10, -50	<b>2987.5</b>	<b>PASS</b>
Passenger Shoulder Belt	Forward	N/A	3,000 lbs, -10, -50	<b>2989.7</b>	<b>PASS</b>
Driver Seat Assembly	Forward	Wa = 36	20 x Wa = 720	<b>719.6</b>	<b>PASS</b>
Passenger Seat Assembly	Forward	Wa = 34	20 x Wa = 680	<b>672.9</b>	<b>PASS</b>

**LEGEND:** Wa - Weight of Seat Assembly

Wb - Weight of Seat Back

Wc - Weight of Seat Cushion

Z - Distance from Seat SRP to Uppermost Crossmember = 9.0 "

## **FOR REAR SEATS - -**

COMPONENT	LOAD DIRECTION	COMPONENT WEIGHT (lbs)	REQUIRED LOAD (lbs)	ACTUAL LOAD (lbs)	PEAK MOMENT (in-lbs)	ATTACHMENT (PASS/FAIL)
Rear Cushion	Forward	Wc = 10	20 x Wc = 200	<b>196.8</b>	<b>N/A</b>	<b>PASS</b>
Left Back	Forward	Wb = 12	20 x Wb = 240	<b>238.0</b>	<b>N/A</b>	<b>PASS</b>
Left Back	Rearward	12	20 x Wb = 240	<b>233.7</b>	<b>N/A</b>	<b>PASS</b>
Left Seat Back Moment	Rearward	N/A	3275 in-lb/Z	<b>357.9</b>	<b>3221-1</b>	<b>PASS</b>
Right Back	Forward	Wb = 8	20 x Wb = 160	<b>159.0</b>	<b>N/A</b>	<b>PASS</b>
Rear Cushion	Rearward	Wc = 10	20 x Wc = 200	<b>195.7</b>	<b>N/A</b>	<b>PASS</b>
Right Back	Rearward	Wb = 8	20 x Wb = 160	<b>158.1</b>	<b>N/A</b>	<b>PASS</b>
Right Seat Back Moment	Rearward	N/A	3275 in-lb/Z	<b>363.4</b>	<b>3270.6</b>	<b>PASS</b>

(Continued on next page)

DATA SHEET NO. 2... Continued  
FOR REAR SEATS - - COMBINED

COMPONENT	LOAD DIRECTION	COMPONENT WEIGHT (lbs)	REQUIRED LOAD (lbs)	ACTUAL LOAD (lbs)	ATTACHMENT (PASS/FAIL)
Left Lap Belt	Forward	N/A	3,000 lbs, -10, -50	N/A	N/A
Left Shoulder Belt	Forward	N/A	3,000 lbs, -10, -50	N/A	N/A
Left Rear Seat Back	Forward	Wa = N/A	20 x 24 = N/A	N/A	N/A
Center Lap Belt	Forward	N/A	3,000 lbs, -10, -50	N/A	N/A
Center Shoulder Belt	Forward	N/A	3,000 lbs, -10, -50	N/A	N/A
Right Lap Belt	Forward	N/A	3,000 lbs, -10, -50	N/A	N/A
Right Shoulder Belt	Forward	N/A	3,000 lbs, -10, -50	N/A	N/A
Right Rear Seat Back	Forward	Wa = N/A	20 x 24 = N/A	N/A	N/A

COMMENTS:

RECORDED BY: MARK A. KRATZKE DATE: 08/19/03

APPROVED BY: MATTHEW A. IVORY DATE: 08/19/03



**DATA SHEET NO. 3  
SEAT BACK ANGLES**

VEHICLE			
YEAR	2003	MAKE	HONDA
MODEL	CIVIC DX	BODY STYLE	4 DOOR SEDAN
NHTSA NO.	C35303	VIN	2HGES15163H510524
BUILD DATE	10/02	TEST DATE	08/18/03
TEST LABORATORY	KARCO ENGINEERING, L.L.C.		

**LAP BELT ANCHORAGES:**

SEAT	SEATING POSITION	SPECIFIED ANGLE RANGE ABOVE HORIZONTAL	MEASURED ANGLE		DOES BELT SECURELY FIT ON PELVIS?
			I/B	O/B	
FRONT	Left	30 to 75 degrees	48°	45°	YES
	Center	30 to 75 degrees	N/A	N/A	N/A
	Right	30 to 75 degrees	48°	45°	YES
REAR	Left	30 to 75 degrees	N/A	N/A	N/A
	Center	30 to 75 degrees	N/A	N/A	N/A
	Right	30 to 75 degrees	N/A	N/A	N/A

**SHOULDER BELT ANCHORAGES:**

SEAT	SEATING POSITION	SPECIFIED ANGLE RANGE ABOVE OR BELOW HORIZONTAL	MEASURED ANGLE
FRONT	Left	0 – 80 degrees above	62°
		0 – 40 degrees below	N/A
	Right	0 – 80 degrees above	58°
		0 – 40 degrees below	N/A
REAR	Left	0 – 80 degrees above	N/A
		0 – 40 degrees below	N/A
	Center	0 – 80 degrees above	N/A
		0 – 40 degrees below	N/A
	Right	0 – 80 degrees above	56°
		0 – 40 degrees below	N/A

RECORDED BY: MARK A. KRATZKE DATE: 08/18/03

APPROVED BY: MATTHEW A. IVORY DATE: 08/18/03

**DATA SHEET NO. 4****REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING**

The following vehicle has been subjected to compliance testing for FMVSS No. **207**

VEHICLE			
NHTSA NO.	C35303	TEST DATE	08/19/03
CONTRACT NO.	DTNH22-01-C-31025	VIN	2HGES15163H510524
SEAT CONFIGURATION			
VEHICLE OR SEAT MANUFACTURER		HONDA MOTOR COMPANY	
TEST LABORATORY		KARCO ENGINEERING, L.L.C.	

The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. All variances have been reported within 2 working days of vehicle arrival, by letter, to the NHTSA Industrial Property Manager (NAD-30), with a copy to the OVSC COTR. The vehicle is again inspected, after the above test has been conducted, and all changes are noted below. The final condition of the vehicle is also noted in detail.

TEST VEHICLE INFORMATION			
Manufacturer	HONDA	VIN	2HGES15163H510524
Manufacturing Date	10/02	Delivery Date	03/15/03
Dealer	ANTELOPE VALLEY	NHTSA No.	C35303
Odometer Reading (mi.)	77	Fuel Type	GAS
Engine Displacement	4.6 LITERS	Cylinders	8
Transmission	AUTOMATIC	Final Drive	REAR
Engine Placement	LONGITUDINAL	Color	BLUE
Tire Press./Max. Cap. Front	32 psi	Cold Tire Press. Front	32 psi
Tire Press./Max. Cap. Rear	35 psi	Cold Tire Press. Rear	35 psi
Recommend Tire Size	P225/60 R16	Type of Spare	T145/80 D16
Tire Size on Vehicle	P225/60 R16	Manufacturer	GOODYEAR
GVWR	5804 lbs.	Cargo Capacity	200 lbs.
GAWR Front	2700 lbs.	GAWR Rear	3104 lbs.
Air Conditioning	YES	Power Steering	YES
Power Brakes	YES	AM/FM/Cassette	YES
Disc Brakes (Front)	YES	Disc Brakes (Rear)	NO
Power Windows	YES	Tilt Steering	YES
Anti-Lock Brakes (ABS)	YES	Power Seats	YES
Driver Airbag	YES	Passenger Airbag	YES

Test Vehicle Condition: **FRONT OF VEHICLE WAS REMOVED, SEATS WERE TESTED.**

RECORDED BY: MARK A. KRATZKE DATE: 08/19/03

APPROVED BY: MATTHEW A. IVORY DATE: 08/19/03

APPENDIX A  
PHOTOGRAPHS

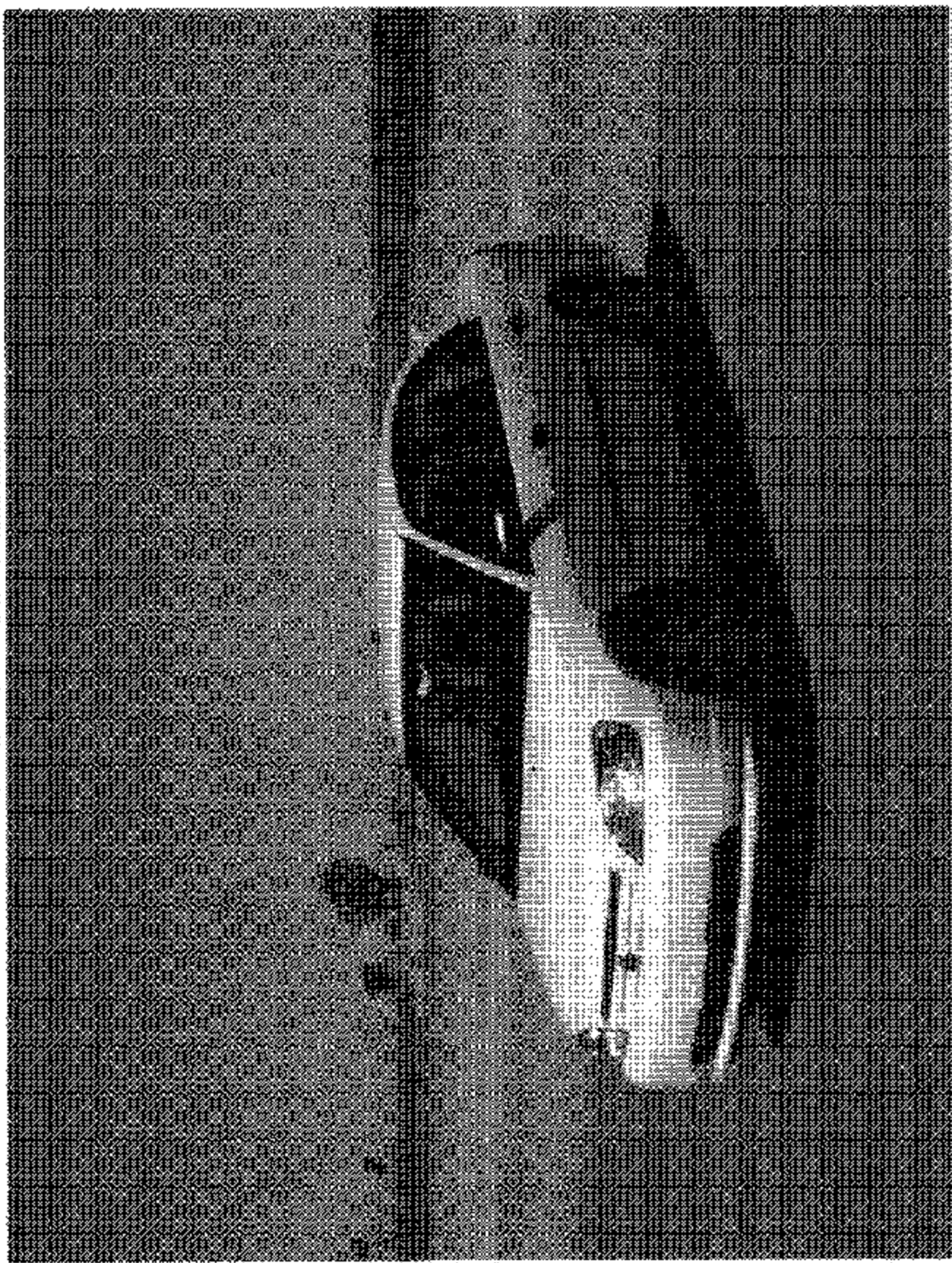


Figure A-1: Left Front (as Received)

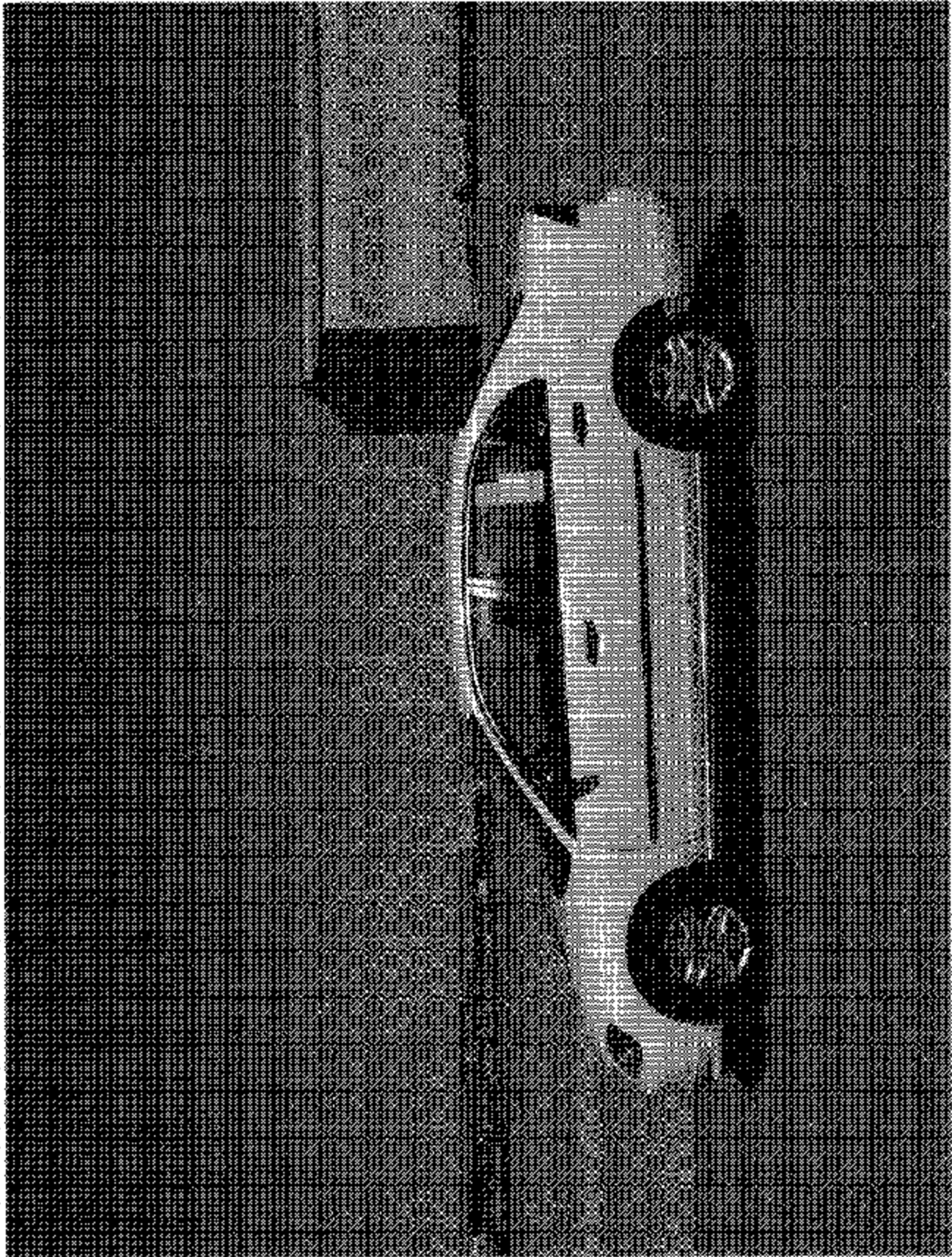


Figure A-2: Left Side (as Received)

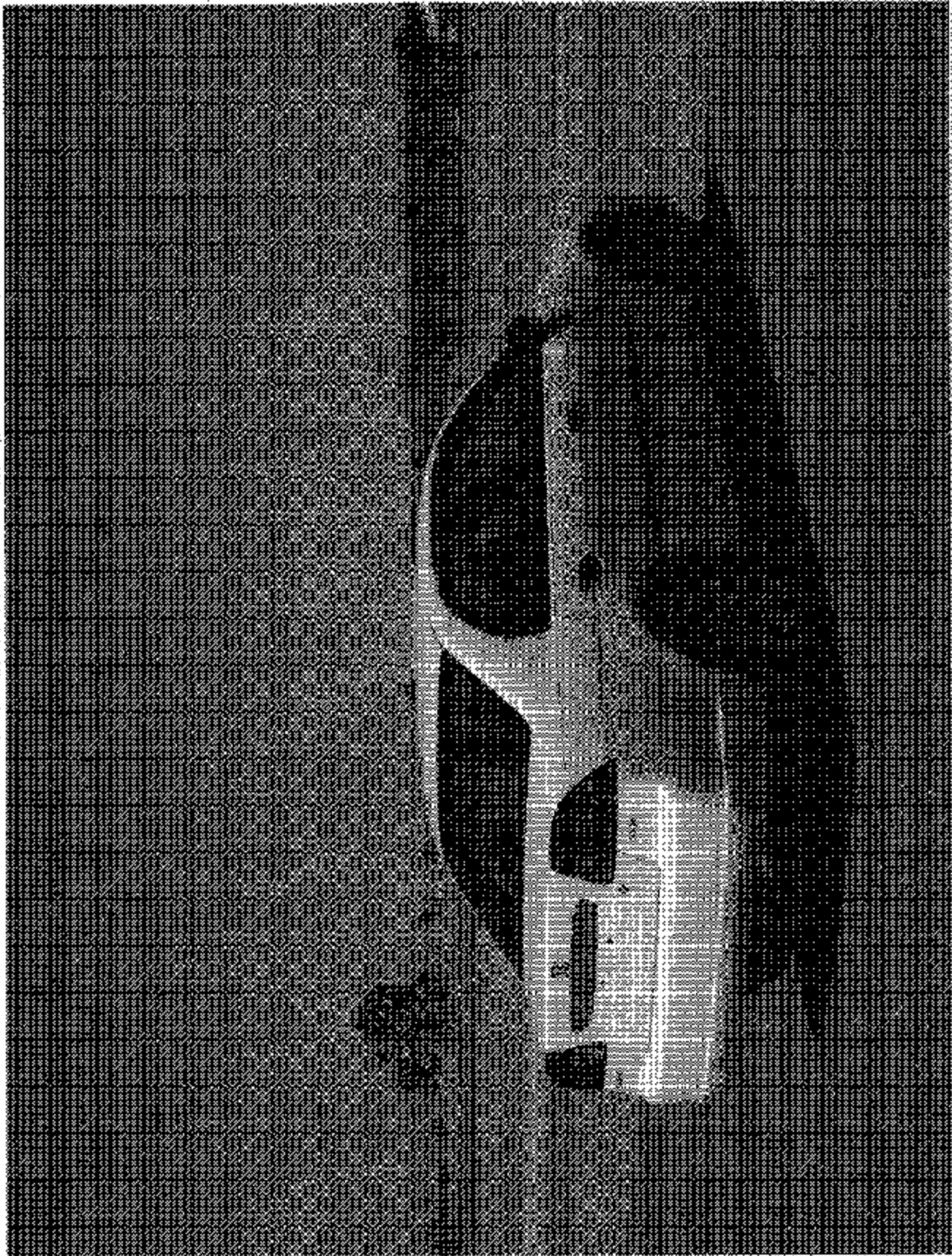


Figure A-3: Right Rear (as Received)

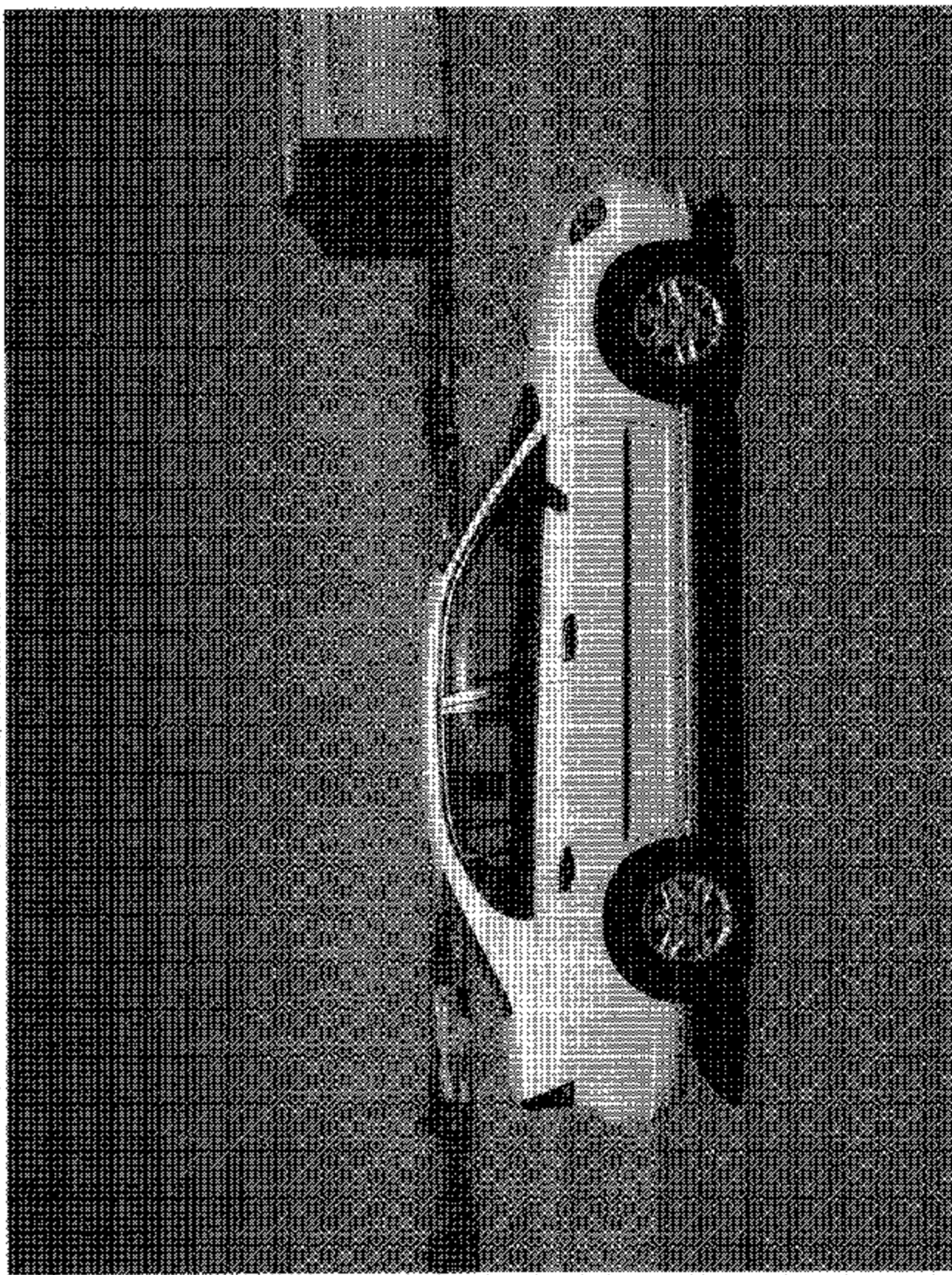


Figure A-4: Right Side (as Received)

MADE BY HONDA OF CANADA LTD.  
A DIVISION OF HONDA CANADA INC.  
OWNERS MANUAL  
THIS VEHICLE CONFORMS TO ALL APPLICABLE  
FEDERAL MOTOR VEHICLE SAFETY, EMISSION  
AND THEFT PREVENTION STANDARDS IN EFFECT  
ON THE DATE OF MANUFACTURE SHOWN ABOVE

VIN: 2HGCS15163H510524



PASSENGER CAR

Figure A-5: Vehicle Certification Label





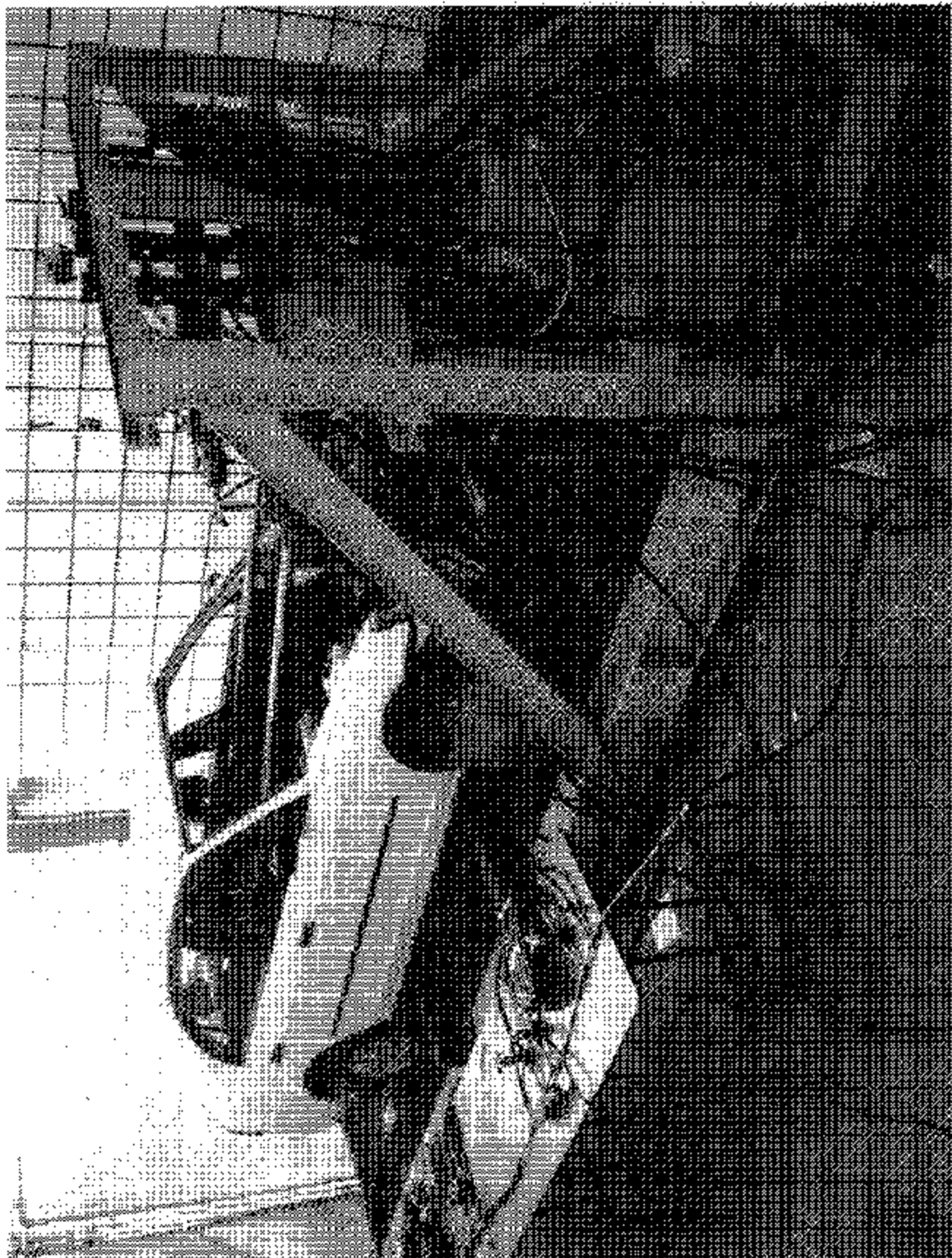


Figure A-7: Vehicle Mounted in Test Fixture

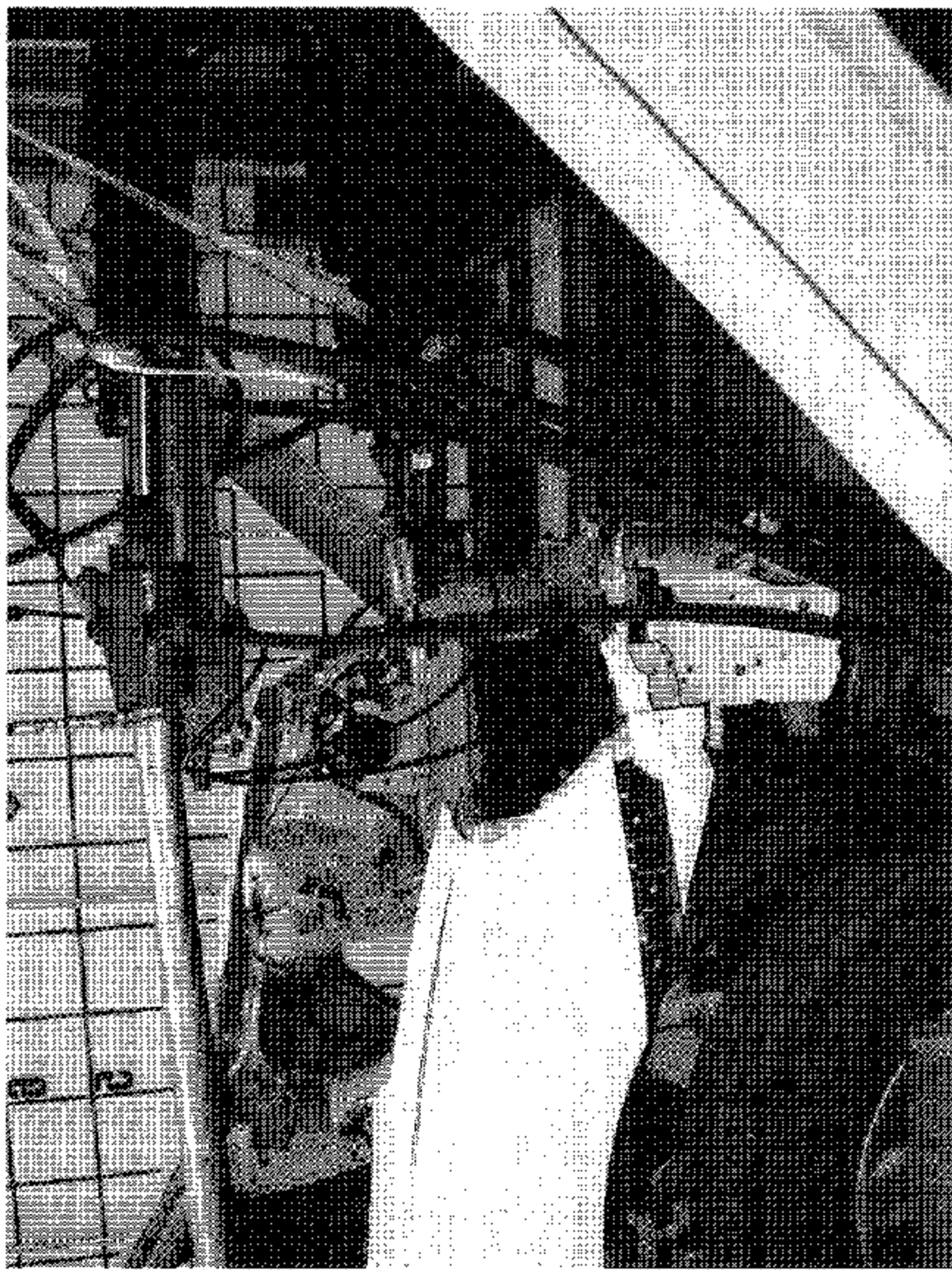


Figure A-8: Vehicle Mounted in Test Fixture



Figure A-9. Vehicle Mounted in Test Fixture

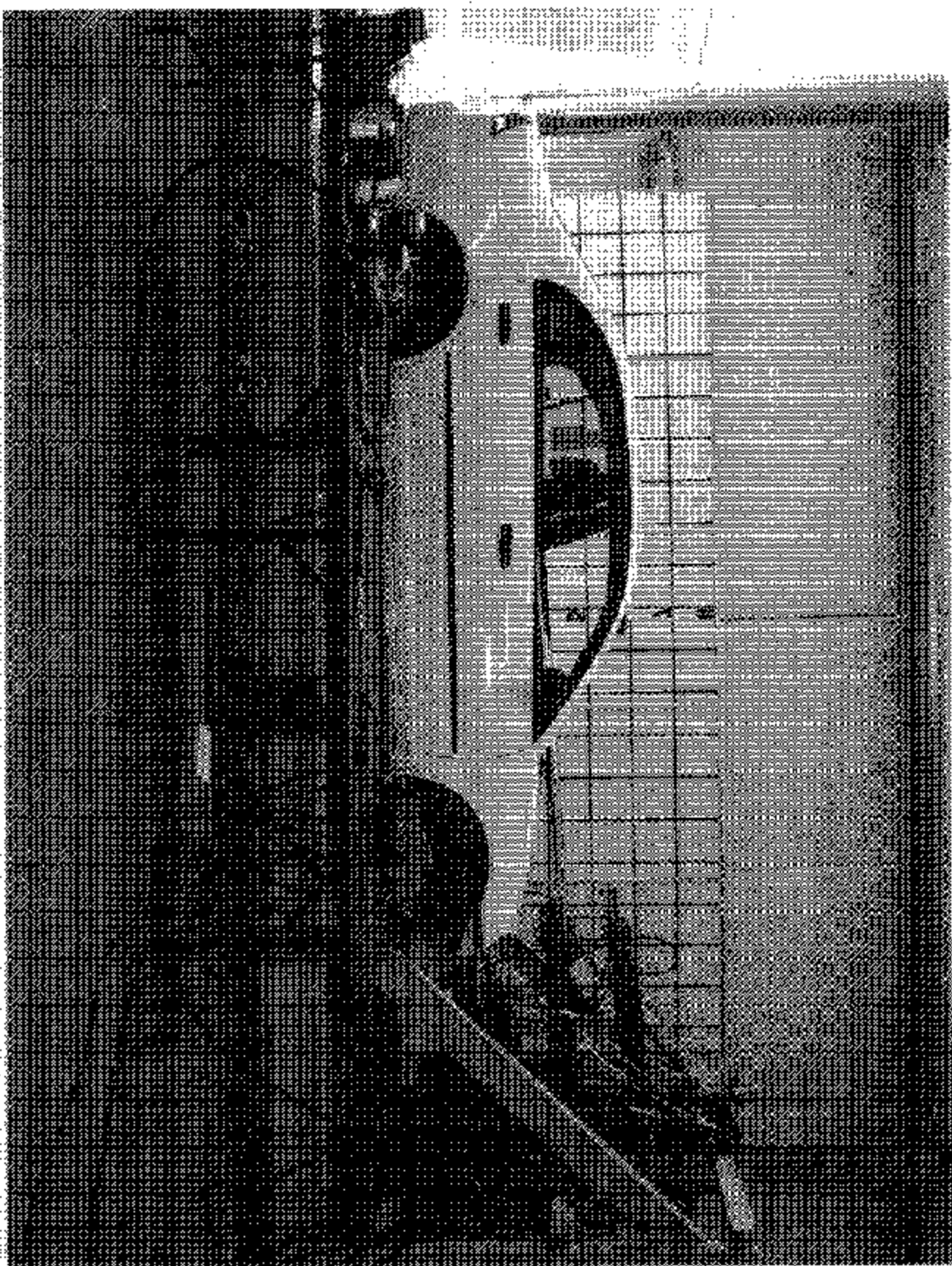


Figure A-10: Vehicle Mounted in Test Fixture



Figure A-11: Aft Moment on Seat Frame and Adjusters, Driver's Side, Pre-Test



Figure A-12: Aft Moment on Seat Frame and Adjusters, Driver's Side, Post-Test

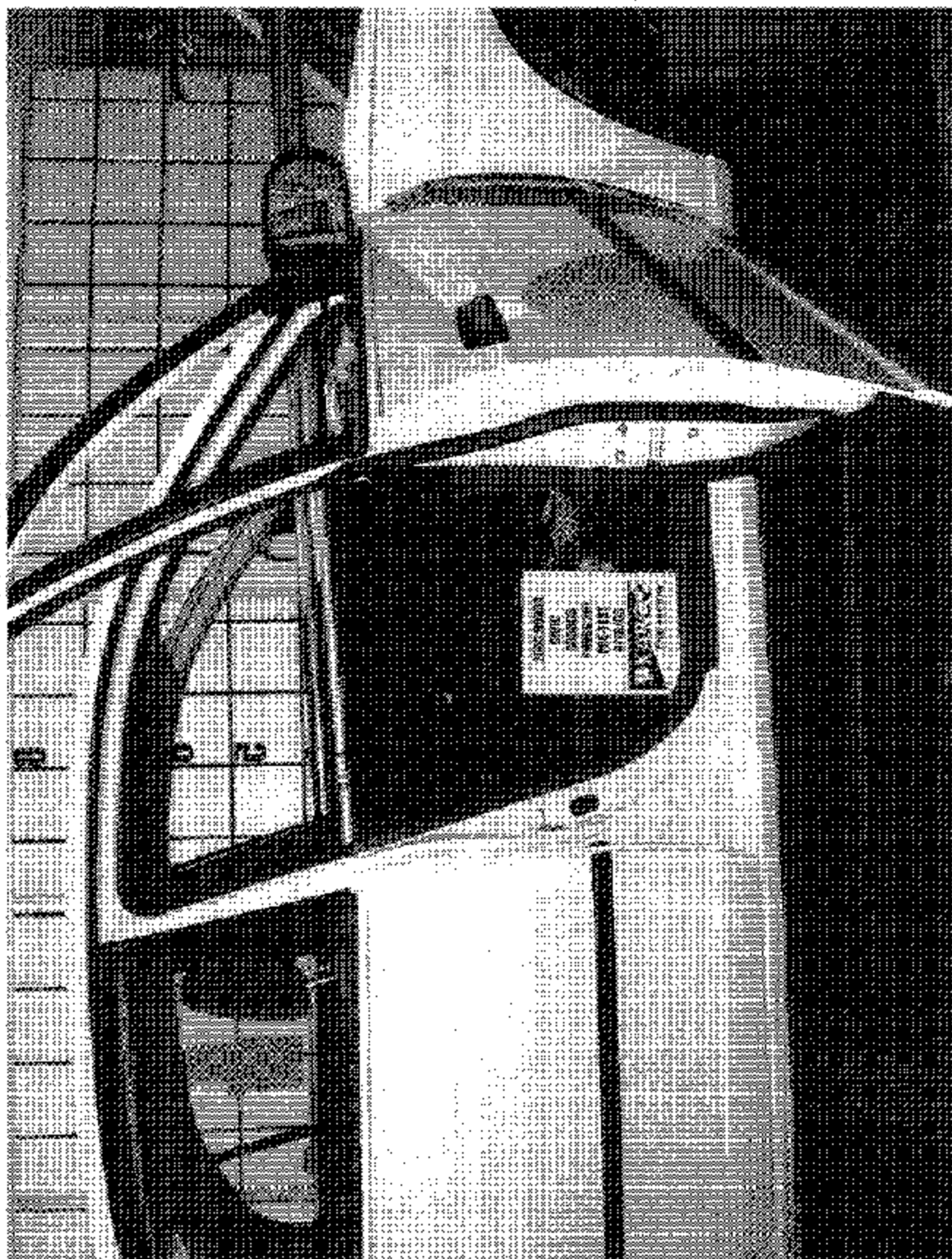


Figure A-13: Aft Moment on Seat Frame and Adjusters, Passenger's Side, Pre-Test



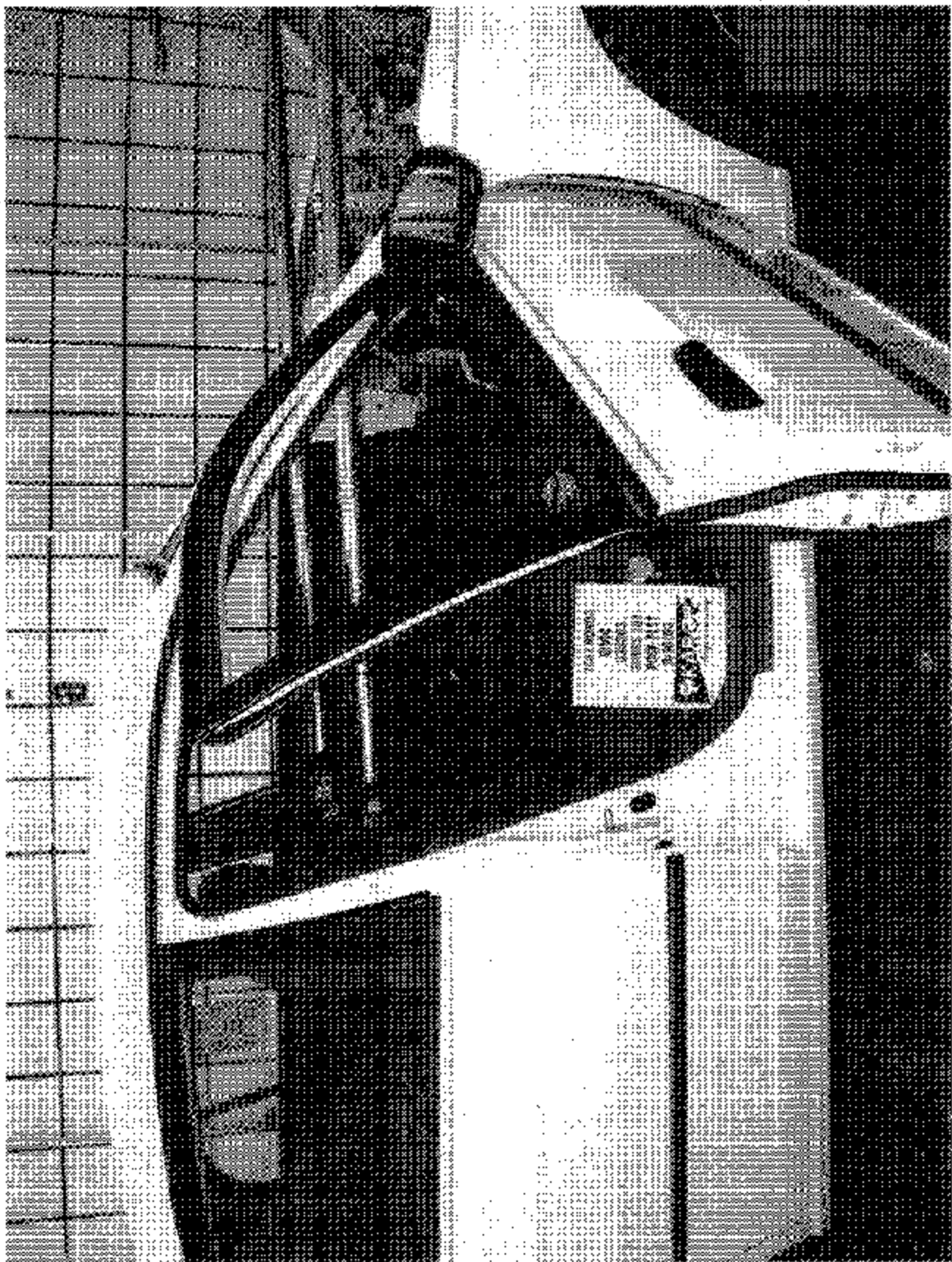


Figure A-14: Aft Moment on Seat Frame and Adjusters, Passenger's Side, Post-Test

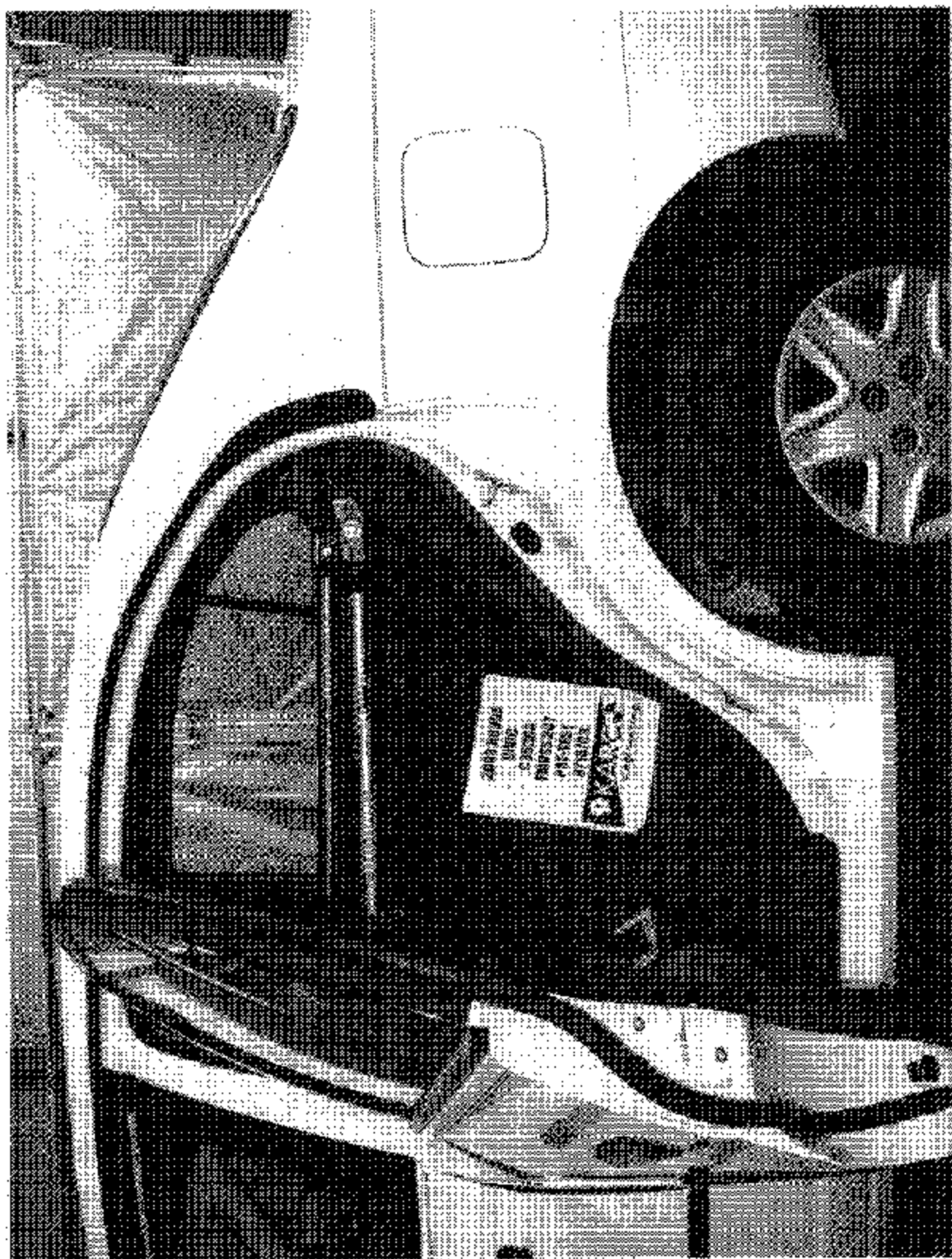


Figure A-15: Alt Moment on Seat Frame and Adjusters, Driver's Side Rear, Pre-Test



Figure A-16. All Moment on Seat Frame and Adjusters. Driver's Side Rear, Post-Test



Figure A-17: Aft Moment on Seat Frame and Adjusters, Passenger's Side Rear, Pre-Test

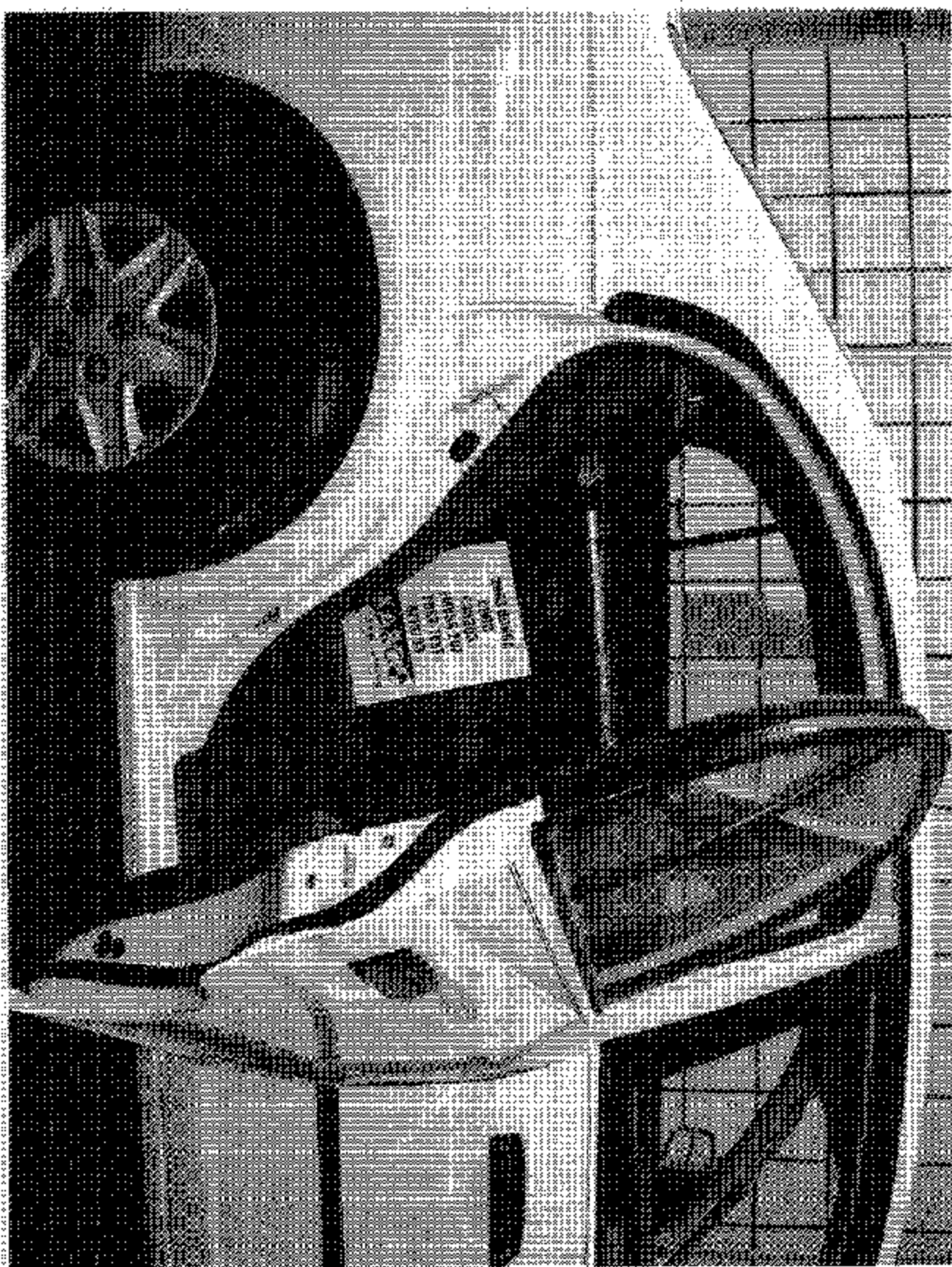


Figure A-18: Air Moment on Seat Frame and Adjusters, Passenger's Side Rear, Pre-Test

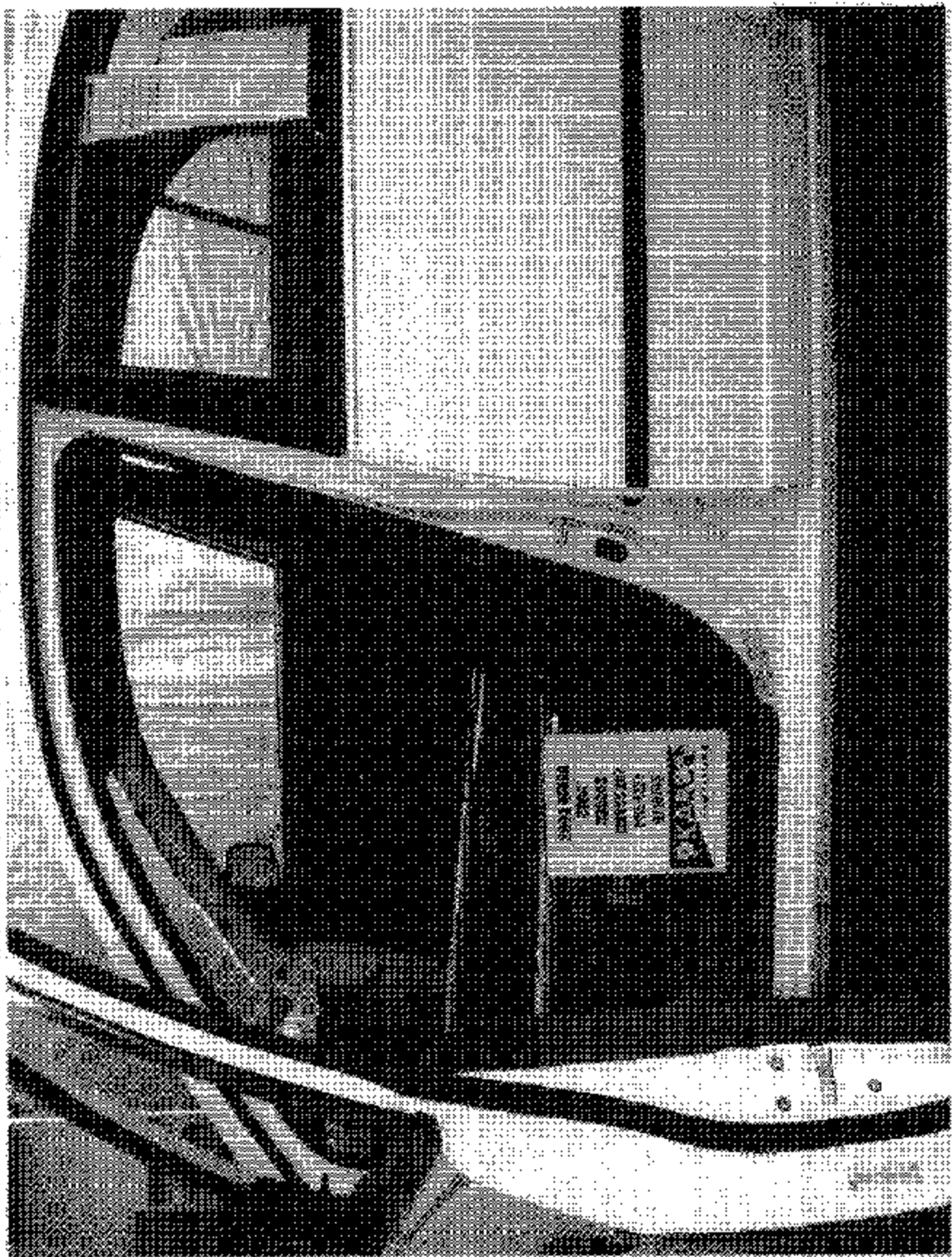


Figure A-19: Air Load on Seat Frame and Adjusters, Driver's Side, Pre-Test

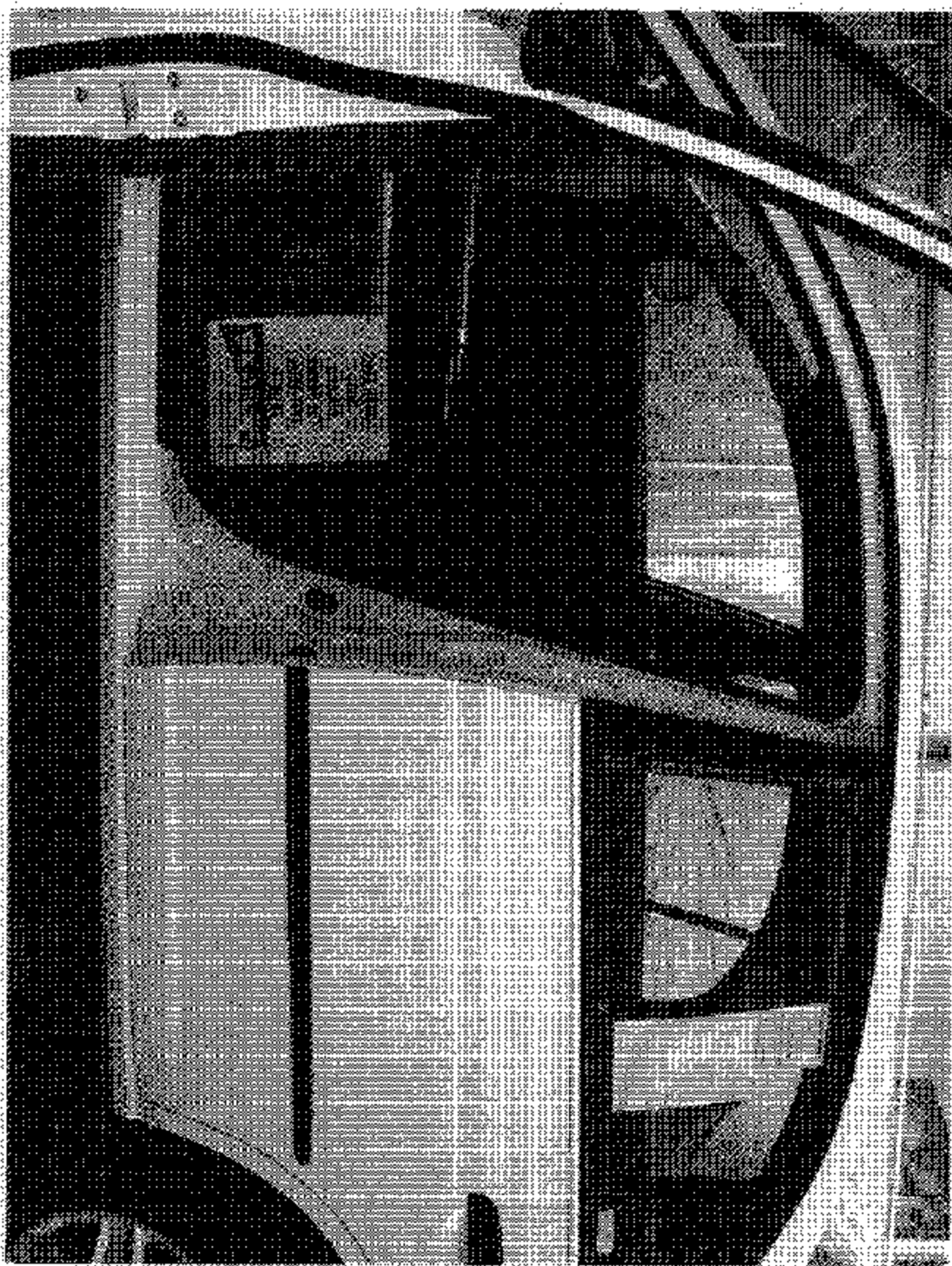


Figure A-20: Air Load on Seat Frame and Adjusters, Driver's Side, Post-Test

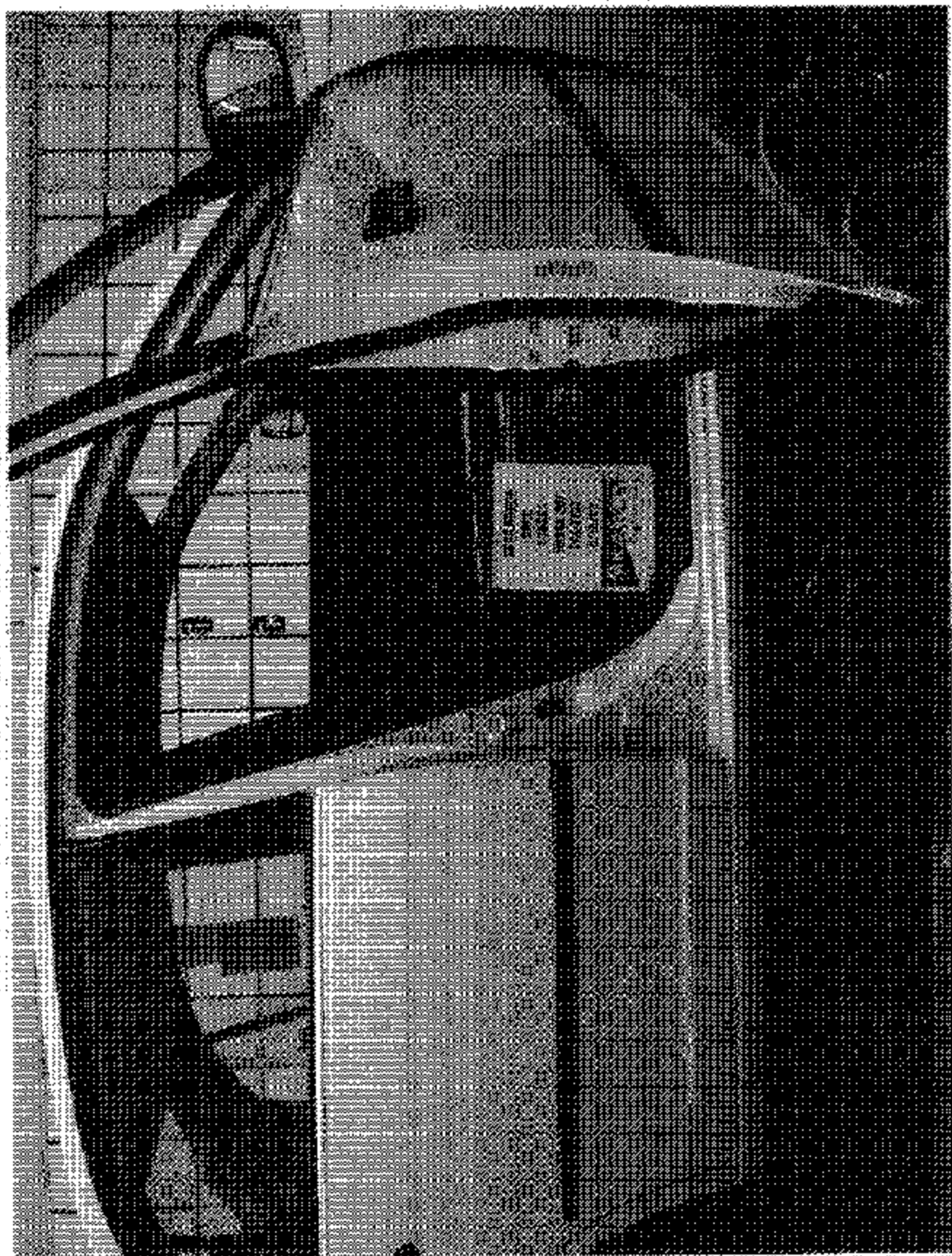


Figure A-21: Aft Load on Seal Frame and Adjusters, Passenger's Side, Pre-Test



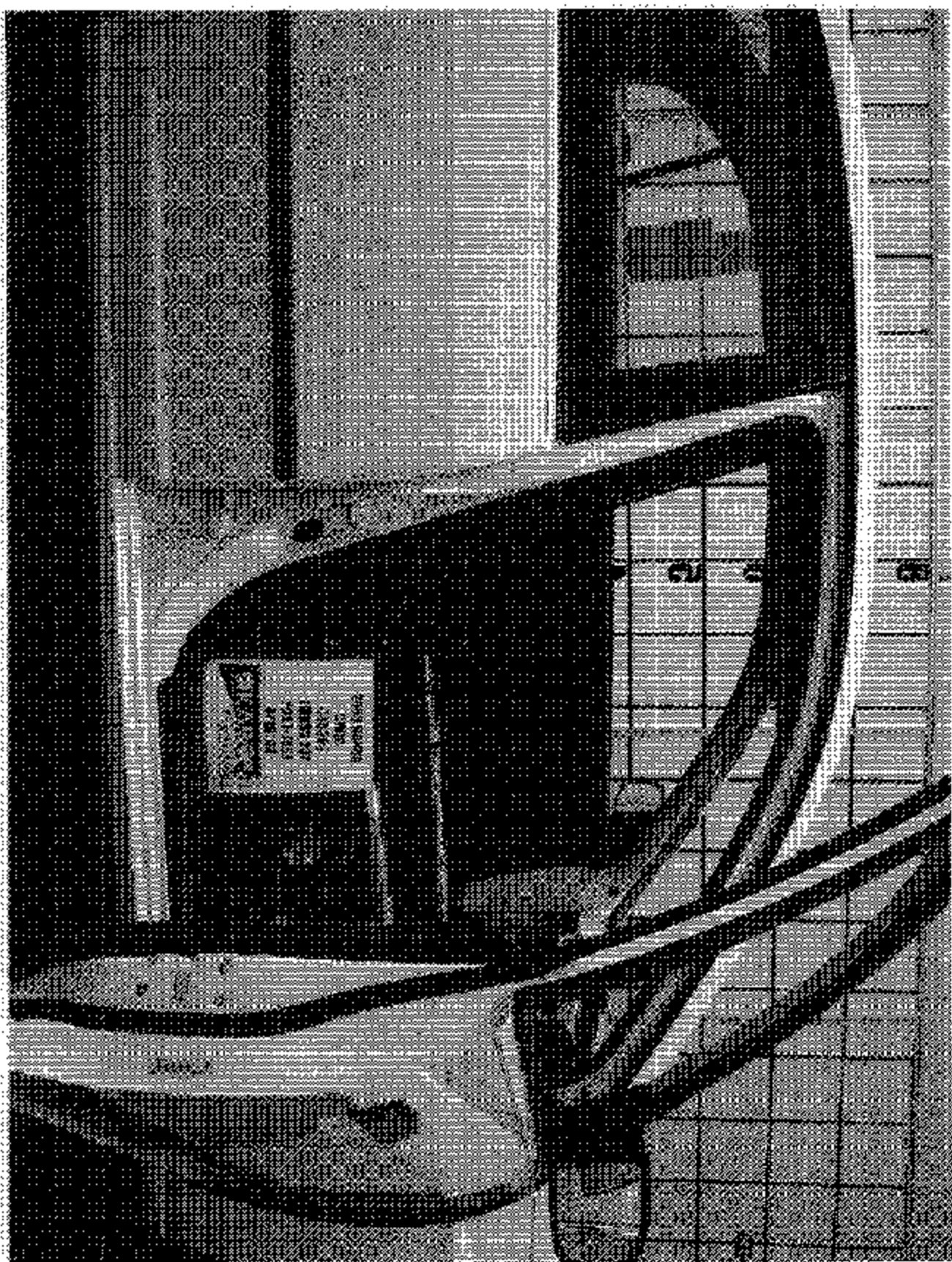


Figure A-22: All Load on Seat Frame and Adjusters, Passenger's Side, Post-Test

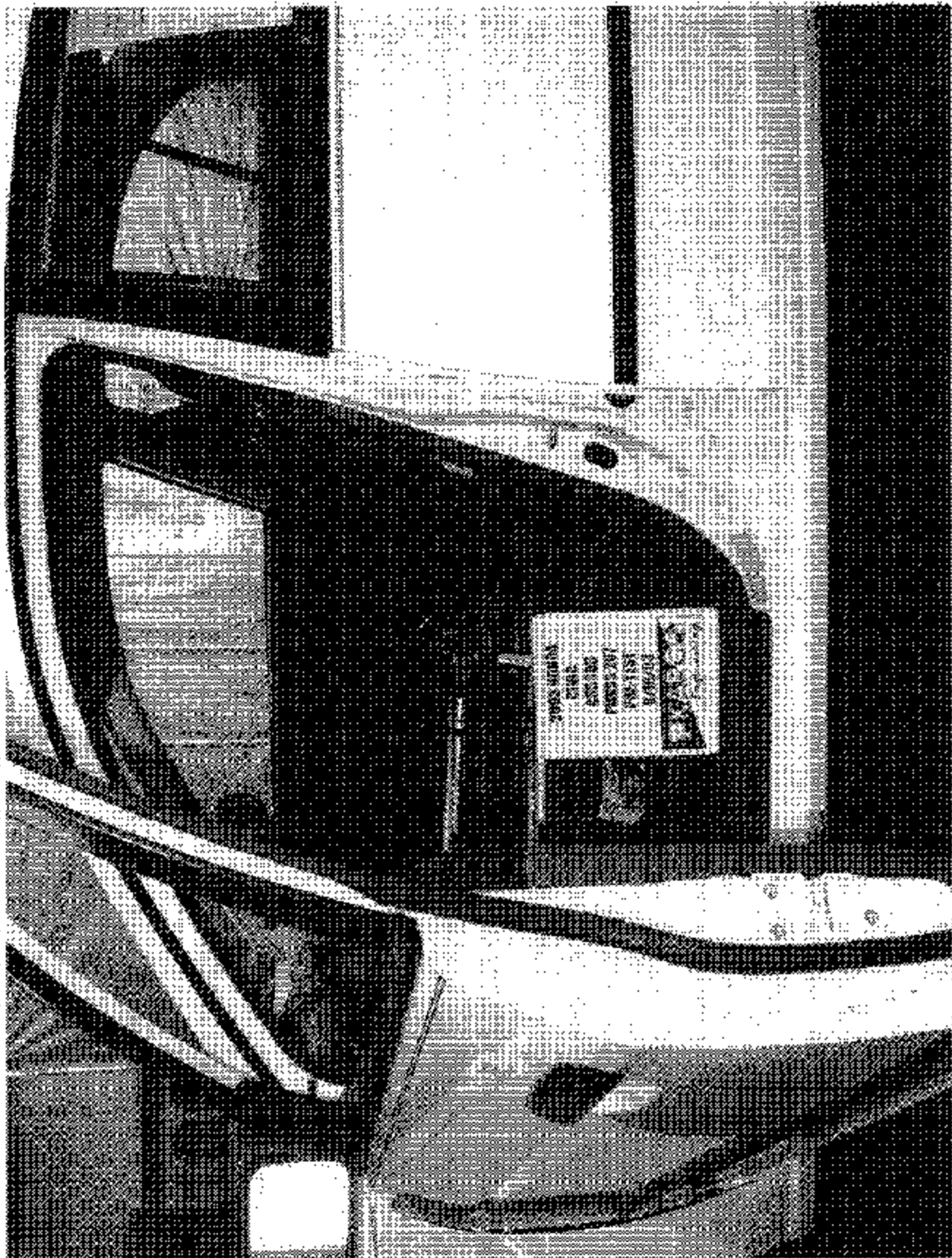


Figure A-23: Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test

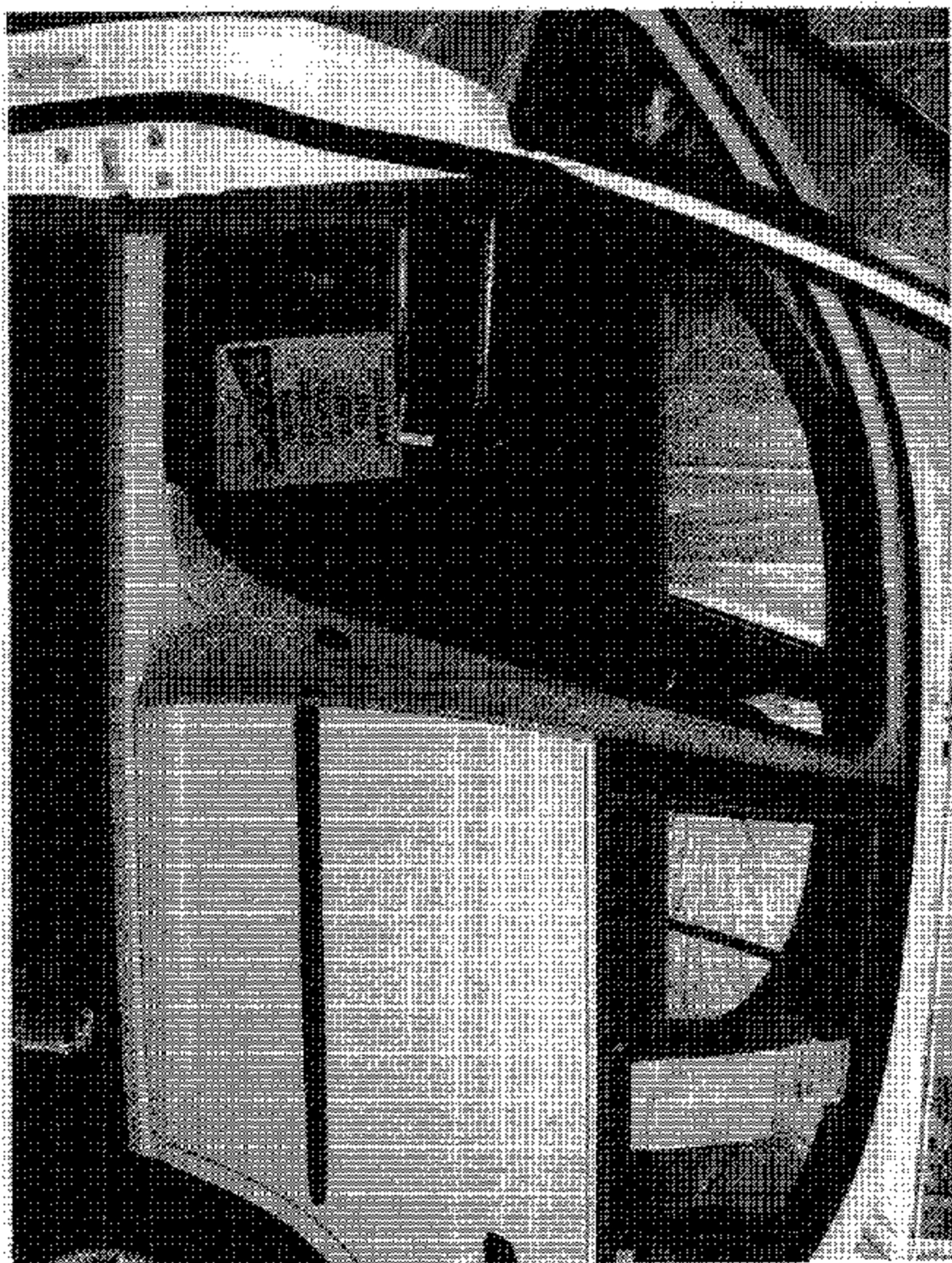


Figure A-24: Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test

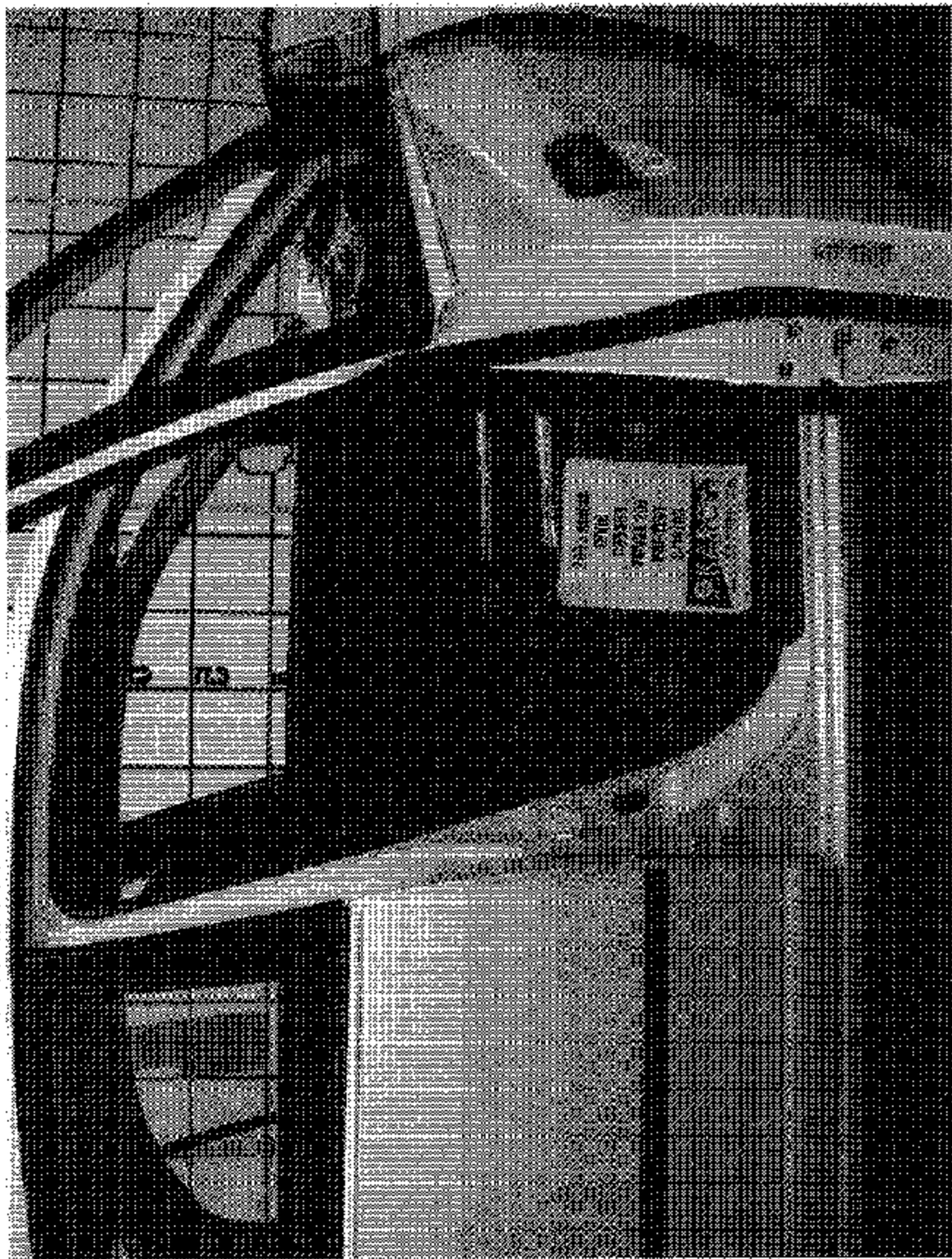


Figure A-25: Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test

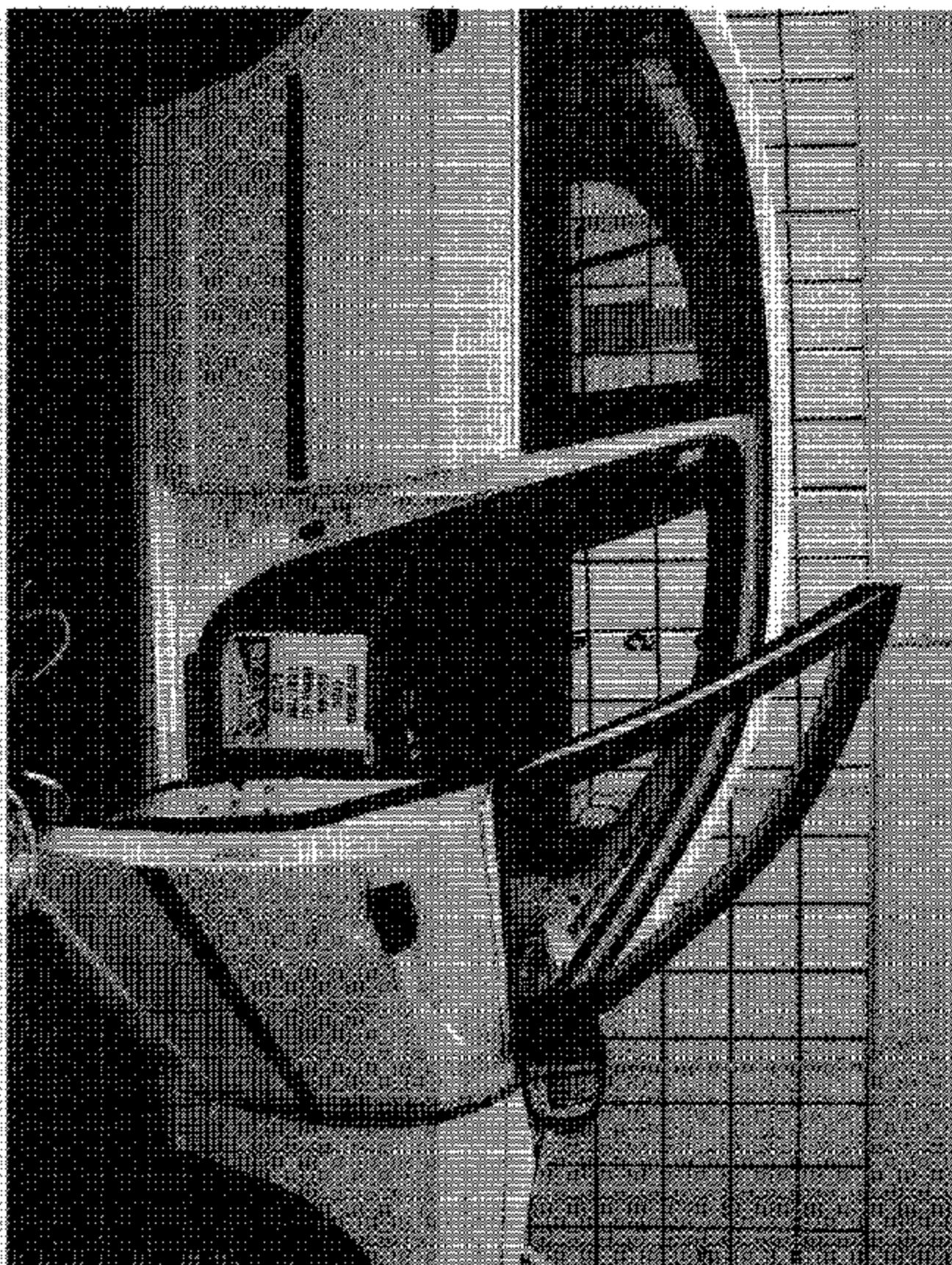


Figure A-26: Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test



Figure A-27: 207/2'10 Forward Load on Seat Frame and Adjusters, Driver's Side, Pre-Test

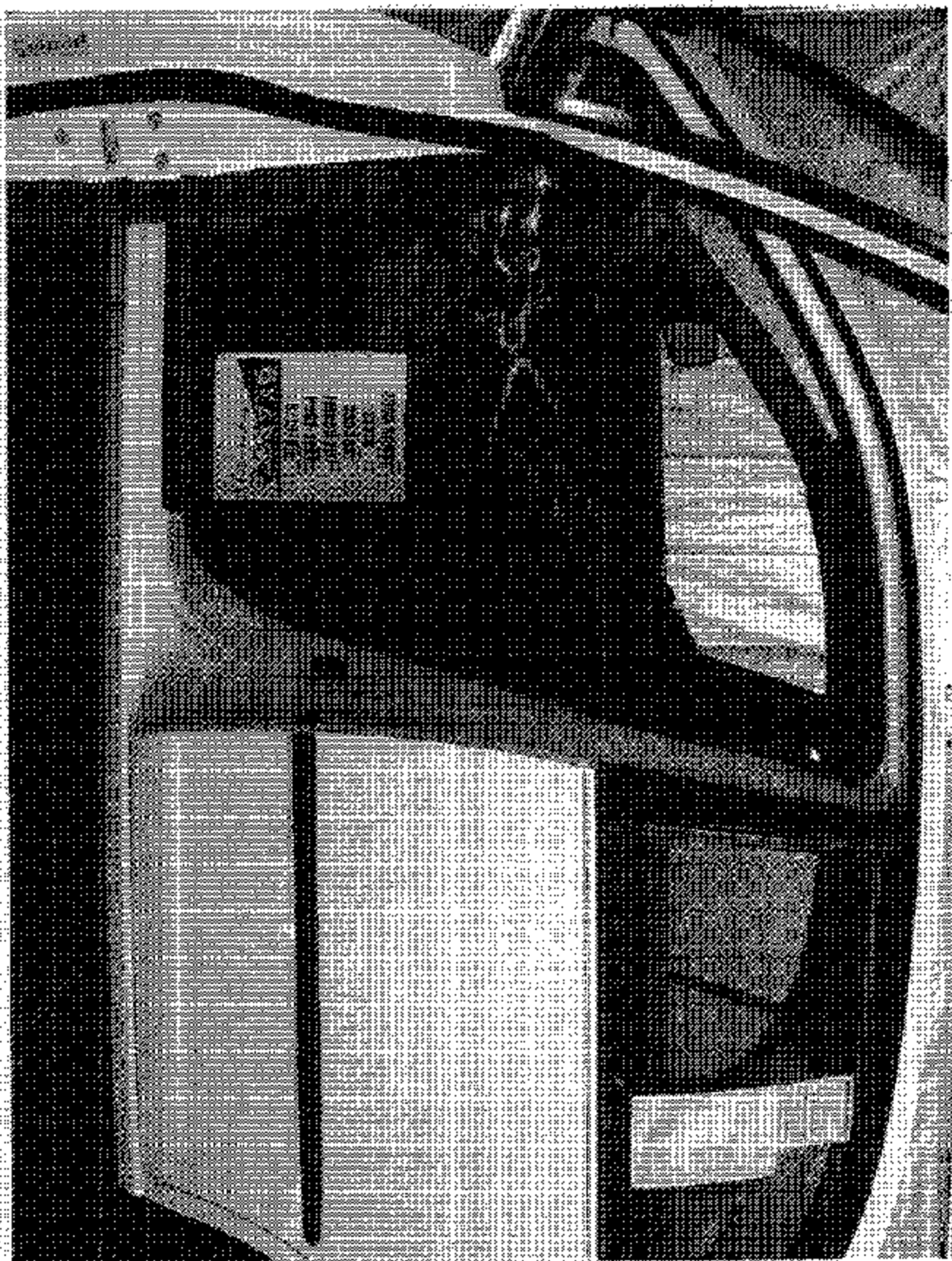


Figure A-28: 207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test







Figure A-30: 207/210 Forward Load on Seat Frame and Adjusters, Driver's Side, Post-Test

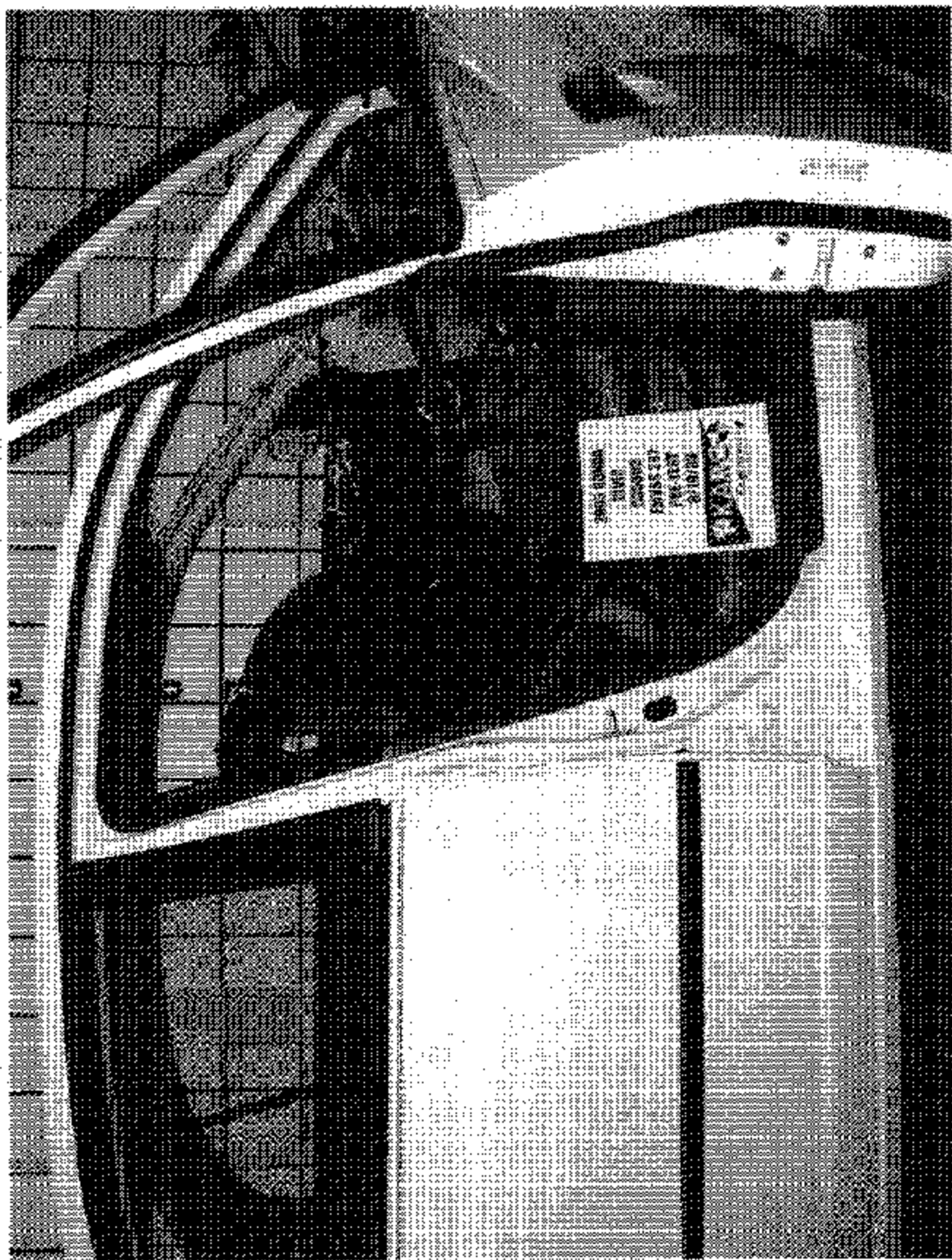


Figure A-31: 207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test



Figure A-32: 207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test



Figure A-33: 2071210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Pre-Test



Figure A-34: 207/210 Forward Load on Seat Frame and Adjusters, Passenger's Side, Post-Test



Figure A-35: All Load on Seat Frame and Adjusters, Driver's Side Rear, Pre-Test



Figure A-36: All Load on Seat Frame and Adjusters, Driver's Side Rear, Post-Test

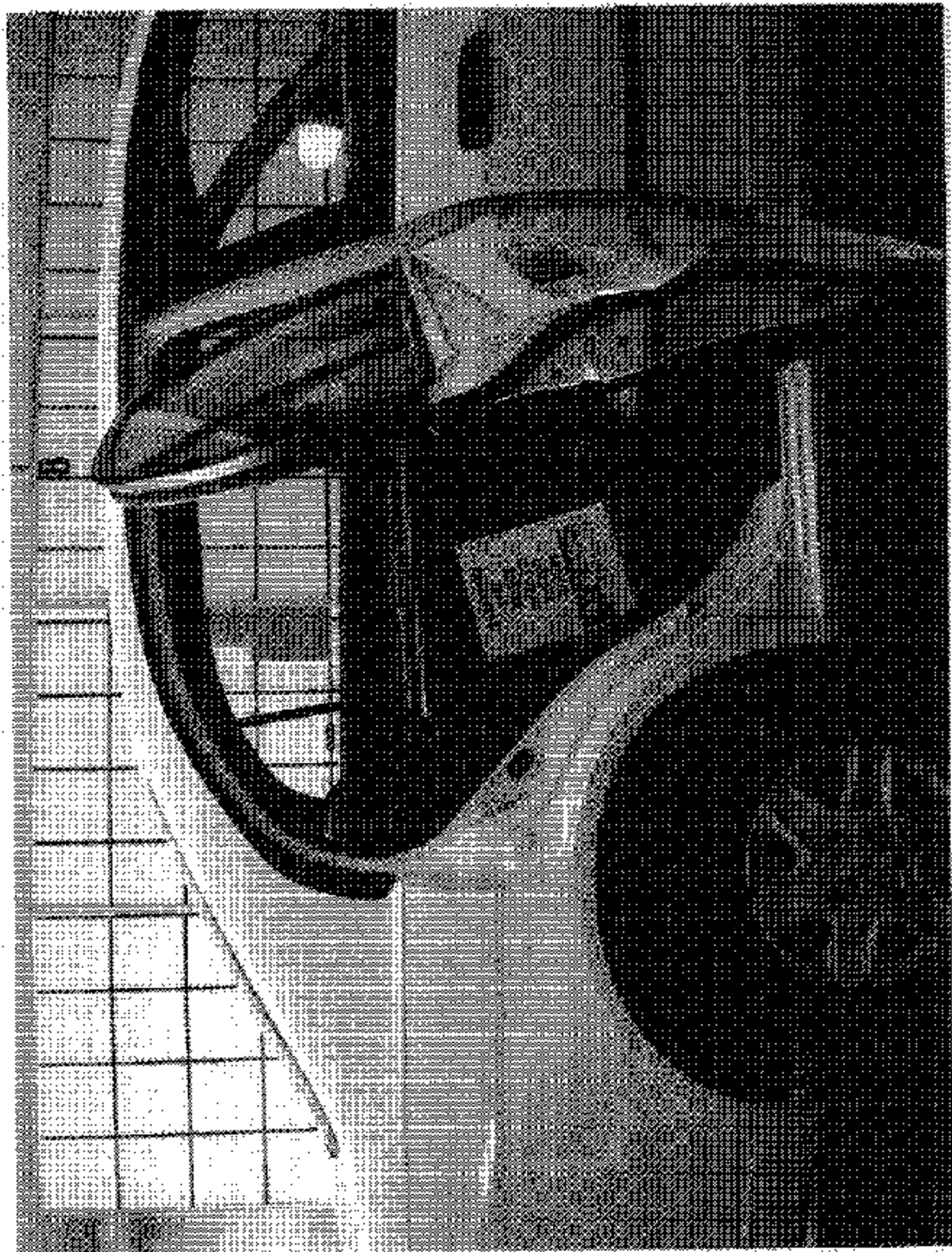


Figure A-37: Aft Load on Seat Frame and Adjusters, Passenger's Side Rear, Pre-Test





Figure A-38: Alt Load on Seat Frame and Adjusters, Passenger's Side Rear, Post-Test

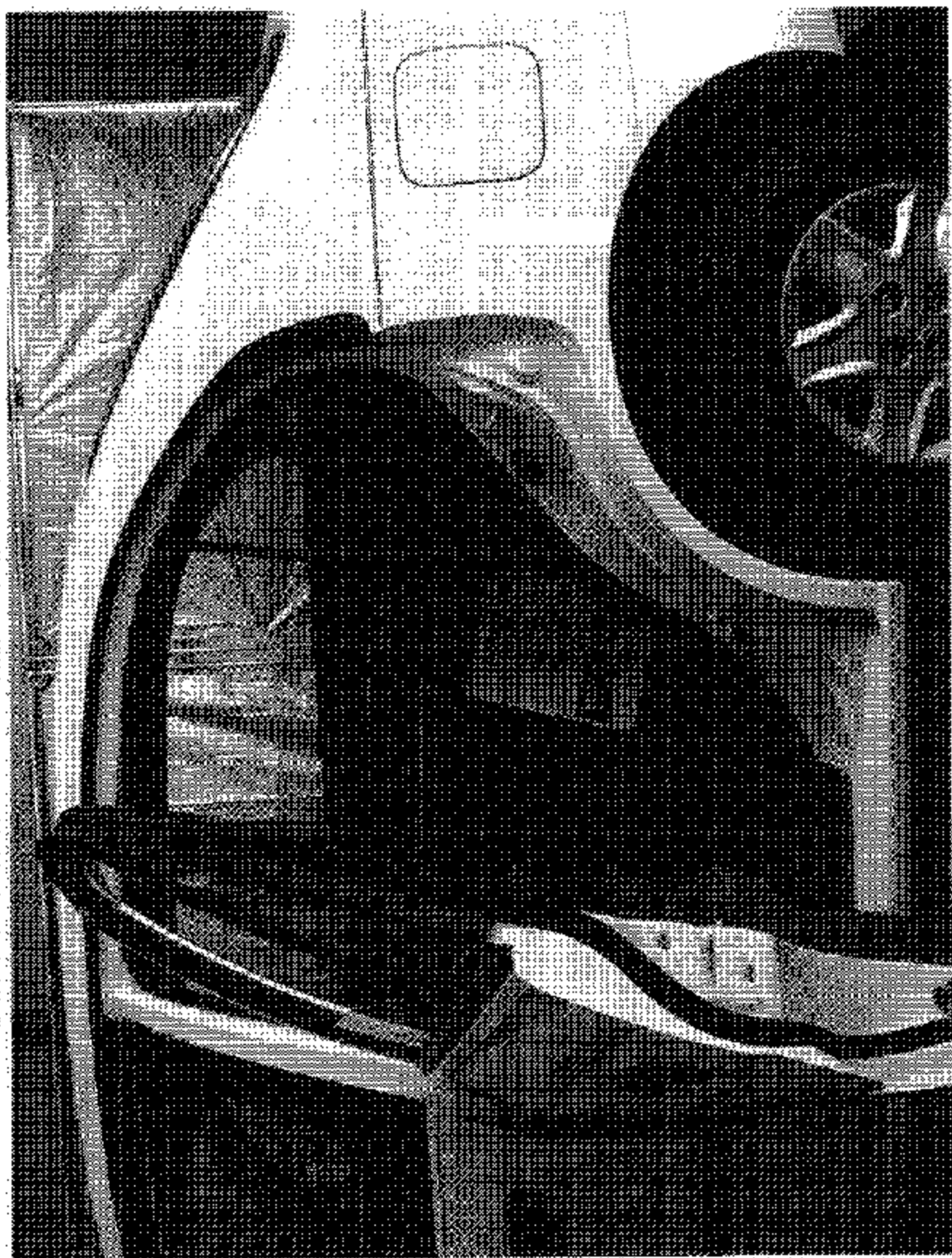


Figure A-39: Forward Load on Seat Frame and Adjusters, Driver's Side Rear, Pre-Test



Figure A-40: Forward Load on Seat Frame and Adjusters, Driver's Side Rear, Post-Test



Figure A-41: Forward Load on Seat Frame and Adjusters, Driver's Side Rear, Pre-Test

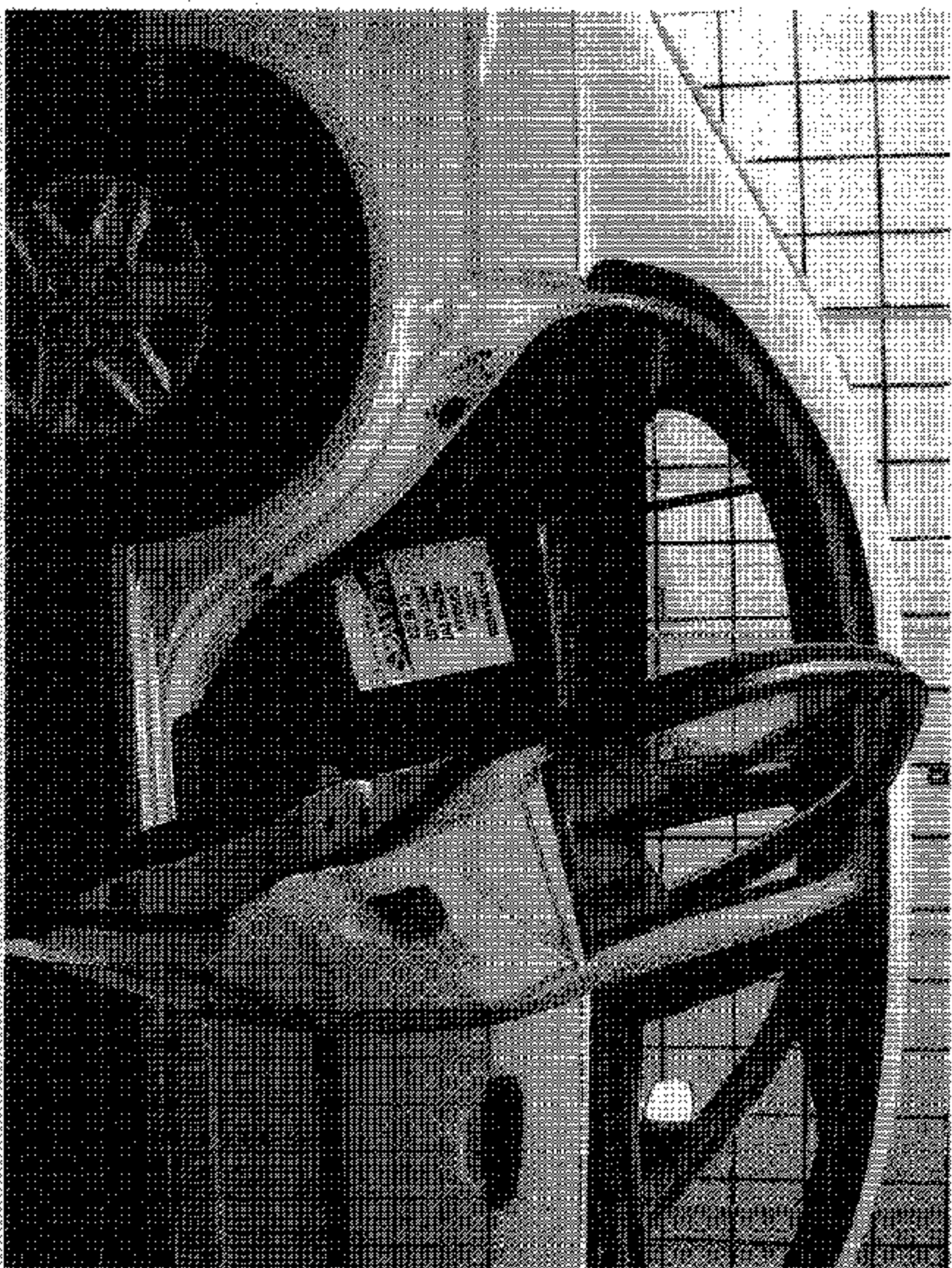


Figure A-42: Forward Load on Seal Frame and Adjusters, Driver's Side Rear, Post-Test

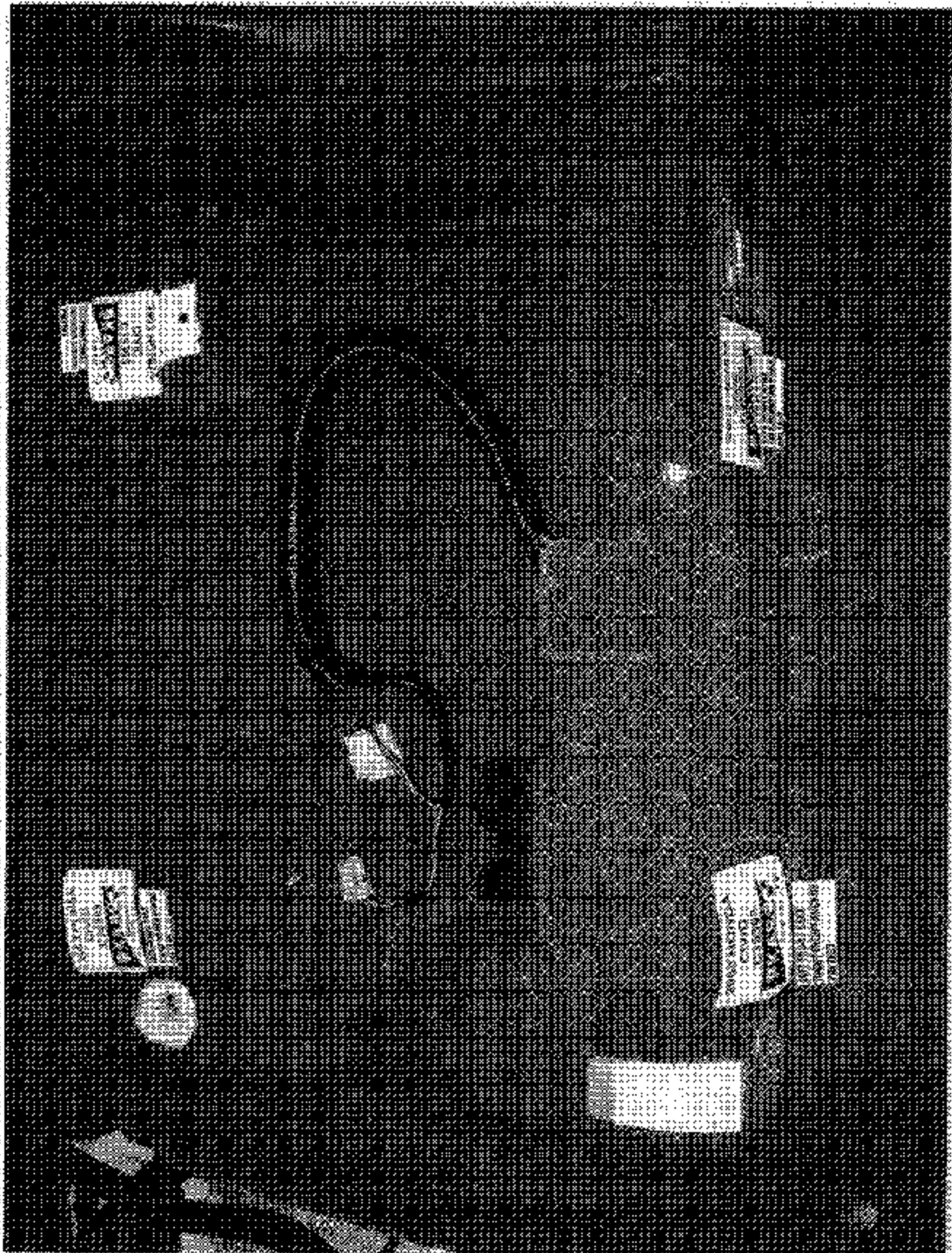
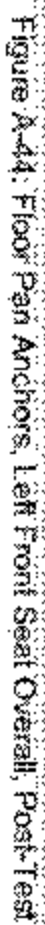


Figure A-43: Floor Pan Anchors, Left Front Seat Overall, Pre-Test



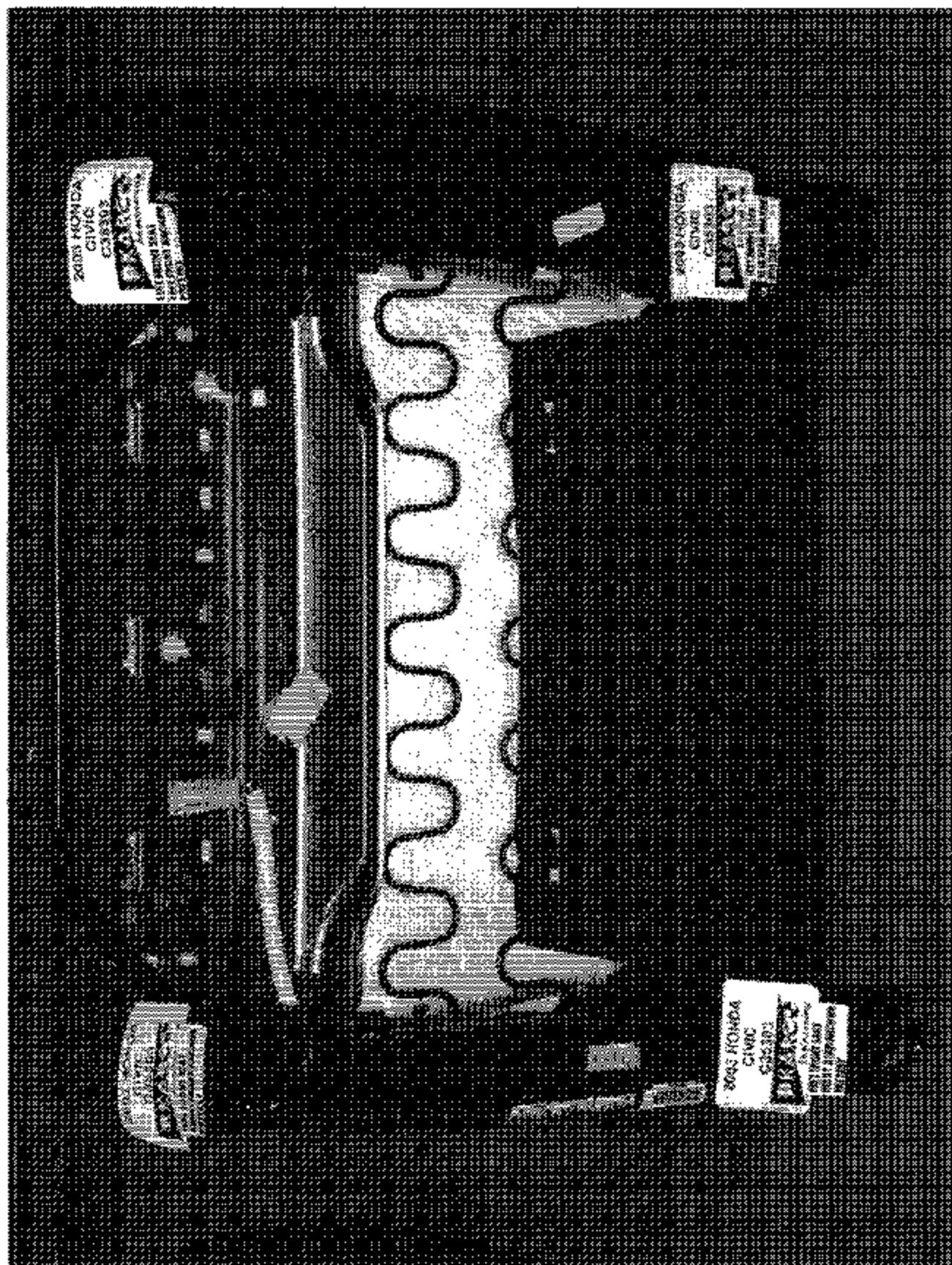


Figure A-45: Seat Anchors, Left Front Seat Overall, Pre-Test



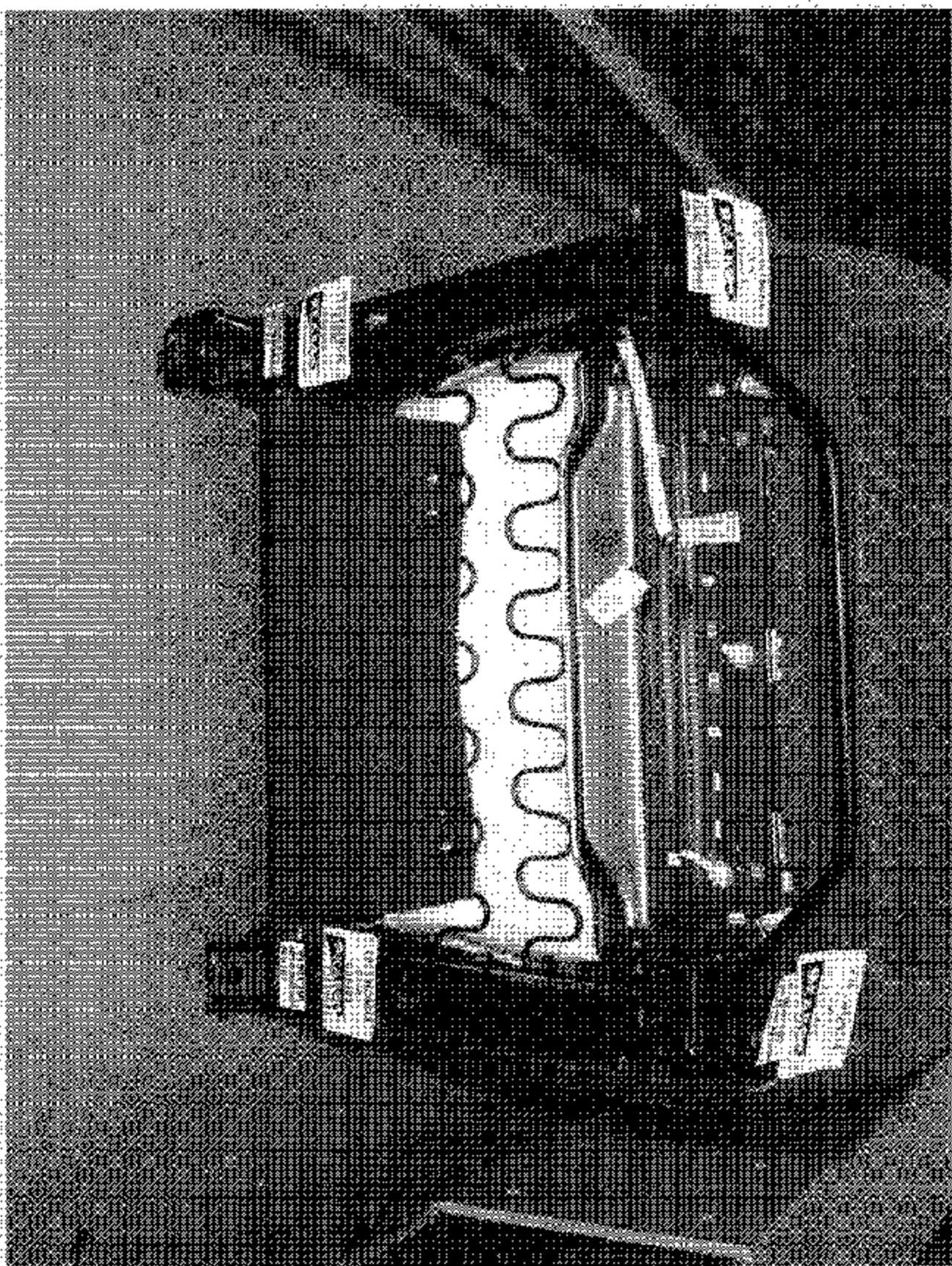


Figure A-46: Seat Anchors, Left Front Seat Overall, Post-Test

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C35303

**OKARCT**  
*Engineering*

**LEFT FRONT SEAT  
LEFT FRONT ANCHOR  
PRETEST**

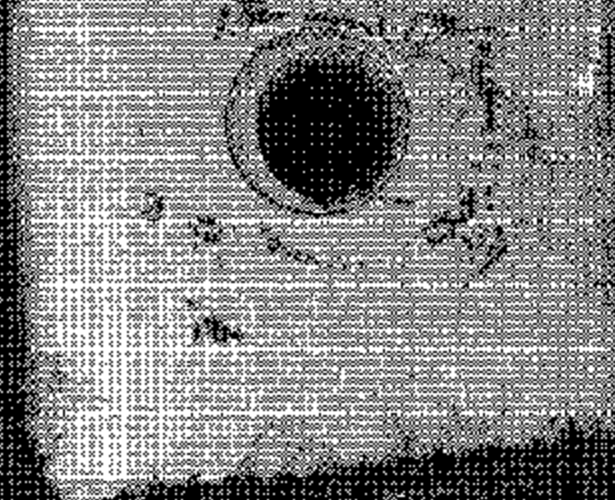


Figure A-47: Floor Pan Anchor, Left Front Seat, Pre-Test



Figure A-48: Floor Pan Anchor, Left Front Seat, Post-Test

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C35303

**EXARC**

*Engineering*

LEFT FRONT SEAT

LEFT FRONT ANCHOR

PRETEST



Figure A-49: Seat Anchor, Left Front Seat, Pre-Test

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**PKARC**

Engineering

LEFT FRONT SEAT

LEFT FRONT ANCHOR

POST TEST

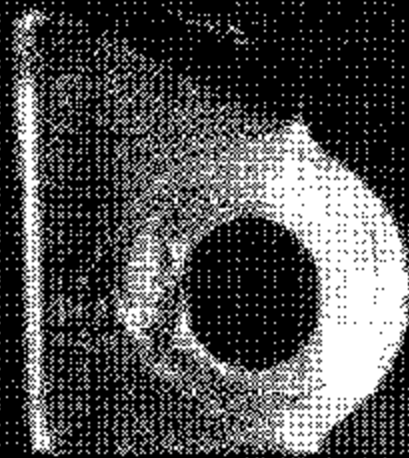


Figure A-50: Seat Anchor, Left Front Seat, Post-Test

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CIVIC

C35303

**OKARCS**  
*Engineering*

LEFT FRONT SEAT  
RIGHT FRONT ANCHOR  
PRETEST

Figure A-51: Floor Pan Anchor, Left Front Seat, Pre-Test



Figure A-52. Floor Pan Anchor, Left Front Seat, Post-Test

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C353D3

REAR SEAT

PRETEST

LEFT FRONT SEAT

RIGHT FRONT ANCHOR

PRETEST



Figure A-53. Seat Anchor, Left Front Seat, Pre-Test



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C35303

**PIKARC**

Engineering

LEFT FRONT SEAT

RIGHT FRONT ANCHOR

POST TEST



Figure A-54: Seat Anchor, Left Front Seat, Post-Test



Figure A-55: Floor Pan Anchor, Left Front Seat, Pre-Test

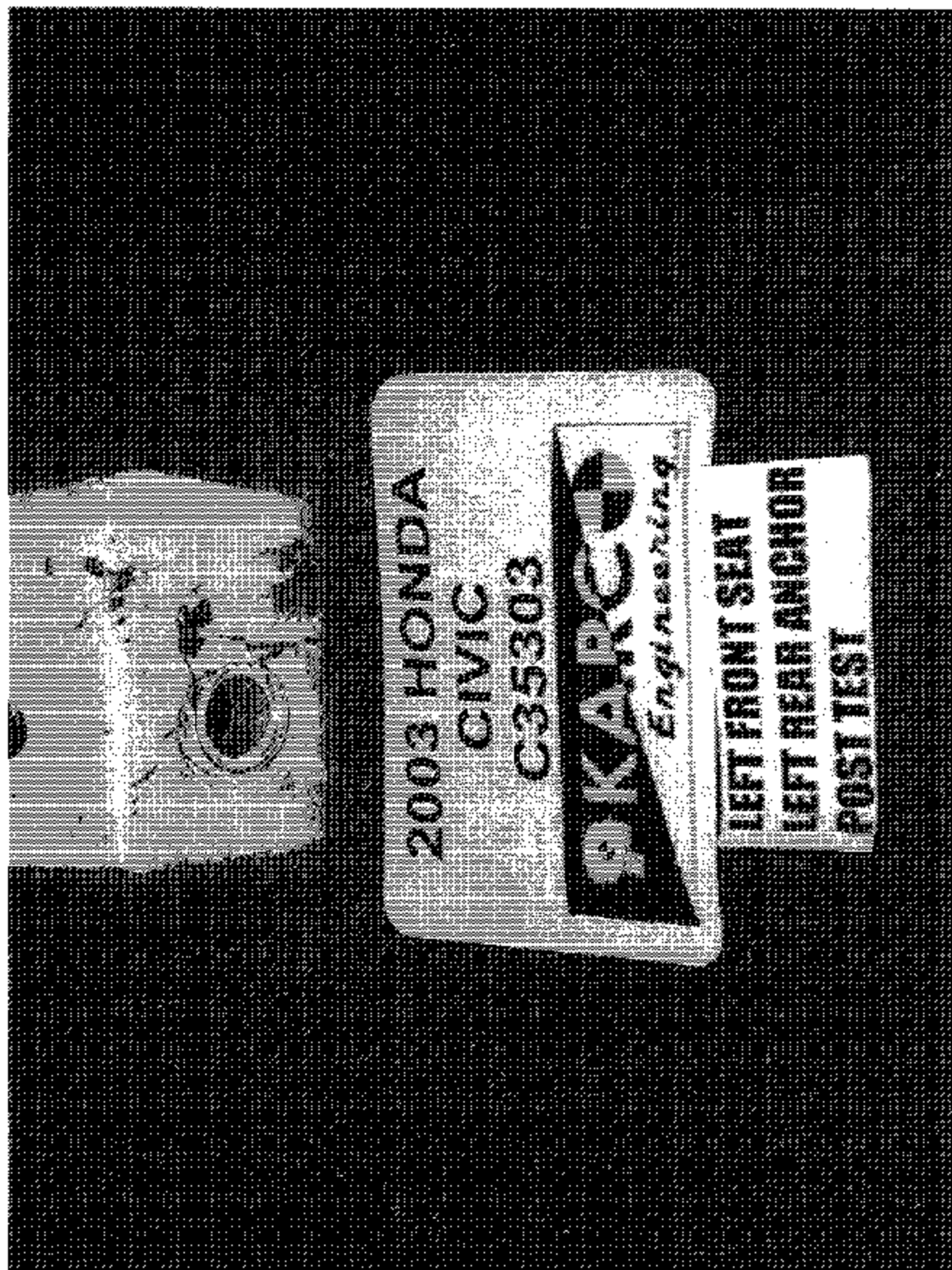


Figure A-56: Floor Pan Anchor, Left Front Seat, Post-Test

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C35303

**PIKARCO**  
*Engineering*

LEFT FRONT SEAT

LEFT REAR ANCHOR

PRETEST

Figure A-57: Seat Anchor, Left Front Seat, Pre-Test

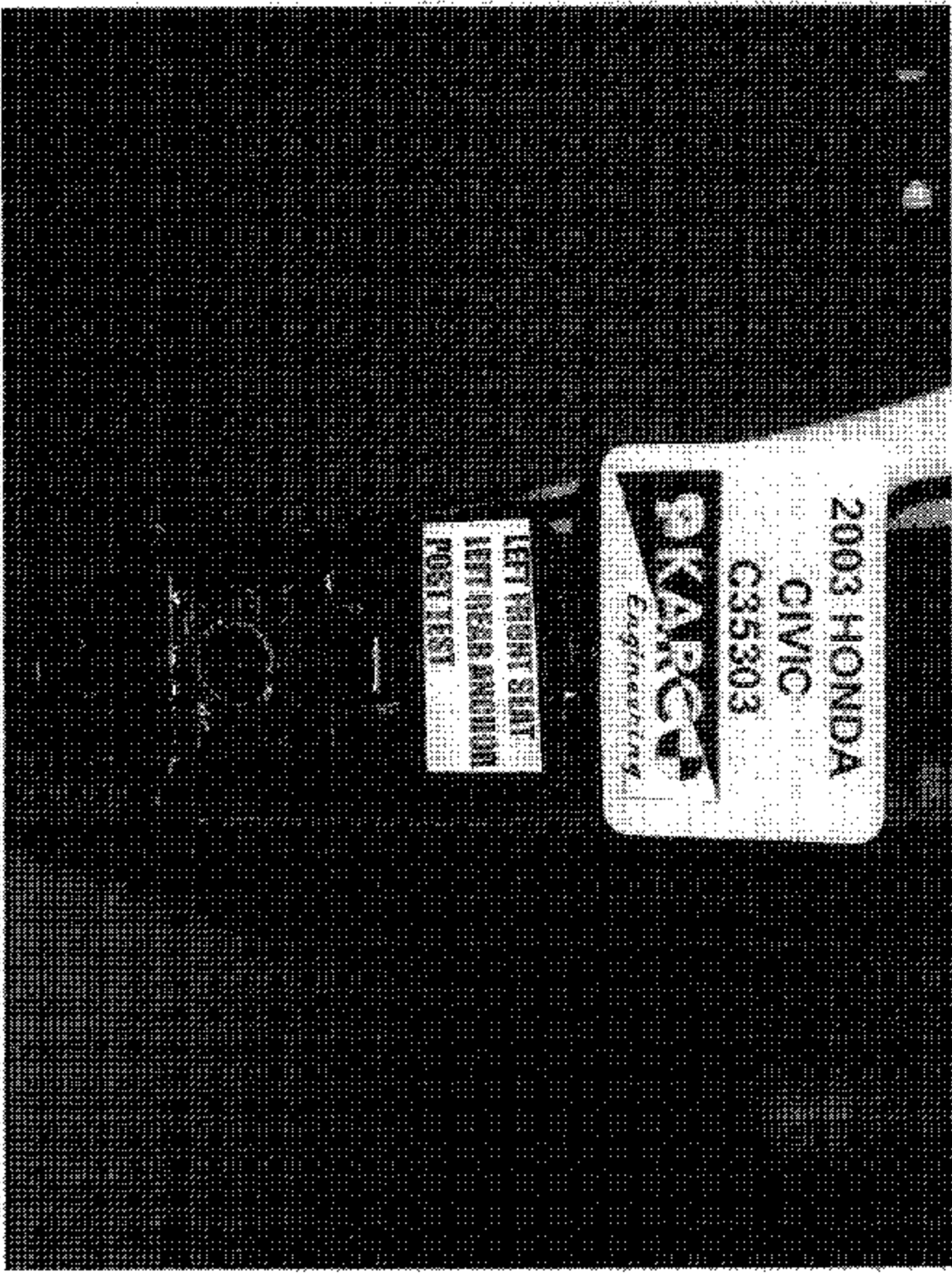


Figure A-58: Seat Anchor, Left Front Seat, Post-Test

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C35303

**AKARCT**  
Engineering

LEFT FRONT SEAT  
RIGHT REAR ANCHOR  
PRETEST

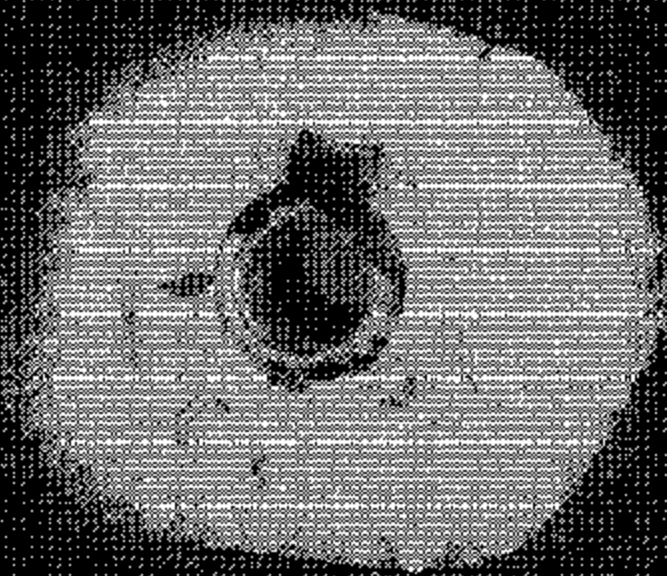


Figure A-59. Floor Pan Anchor, Left Front Seat, Pre-Test

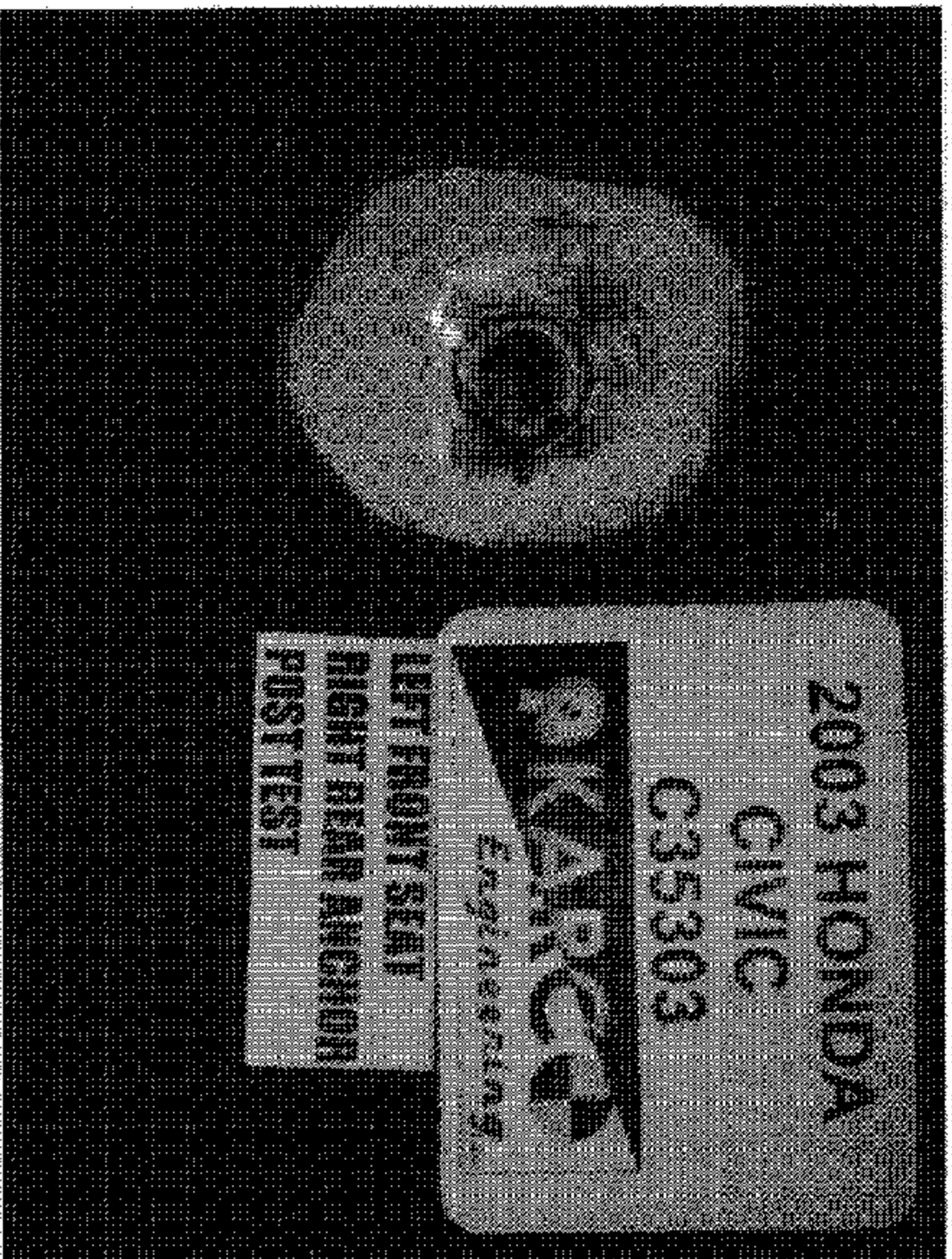


Figure A-60: Floor Pan Anchor, Left Front Seat, Post-Test

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CIVIC

C35303

**PKARPC**

*Engineering*

LEFT FRONT SLAT

RIGHT REAR ANCHOR

PRETEST

Figure A-61: Seat Anchor Left Front Seat, Pre-Test





Figure A-62: Seat Anchor, Left Front Seat, Post-Test

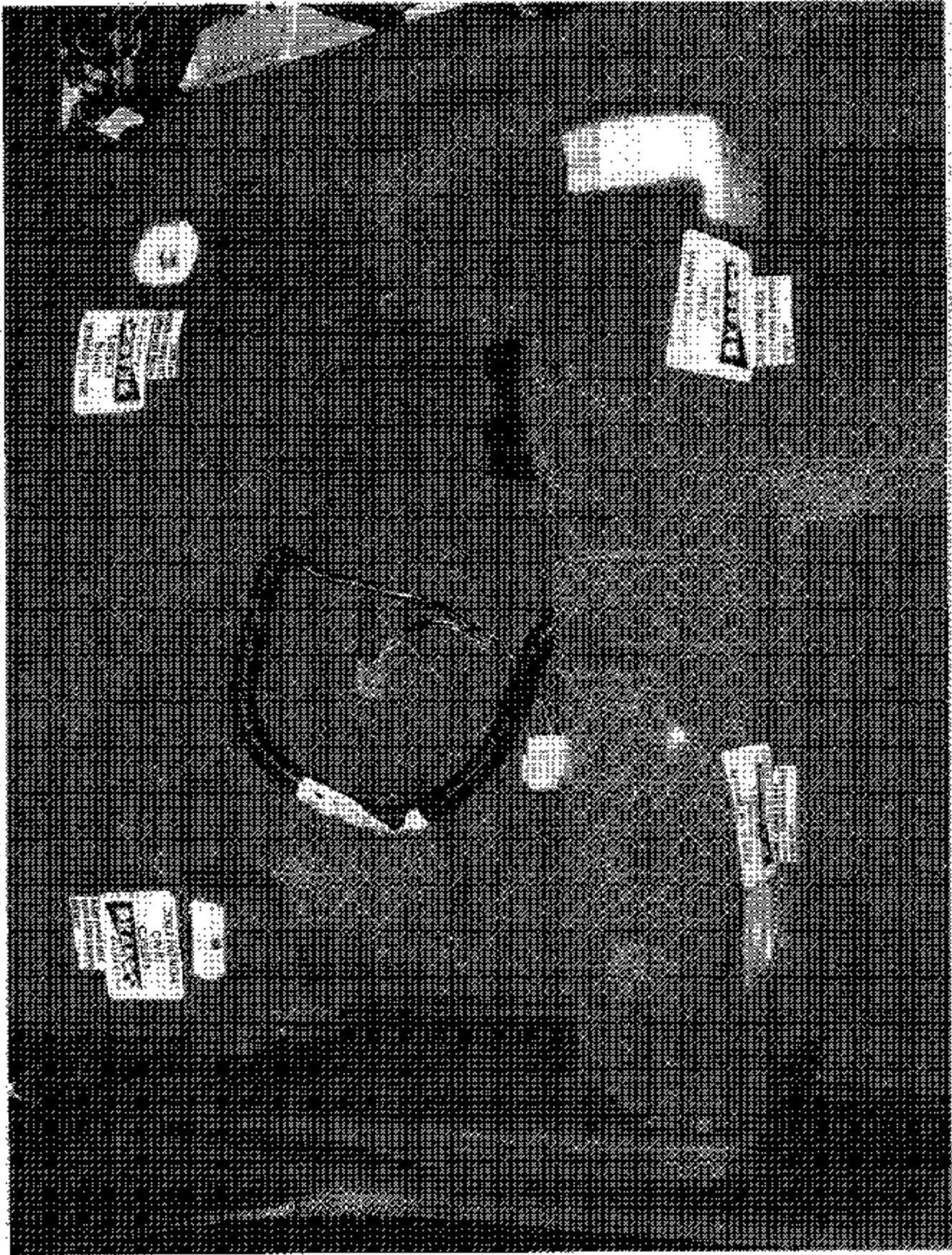


Figure A-63: Floor Pan Anchors, Right Front Seal Overall, Pre-Test



Figure A-64: Floor Pan Anchors, Right Front Seat Overall, Post-Test

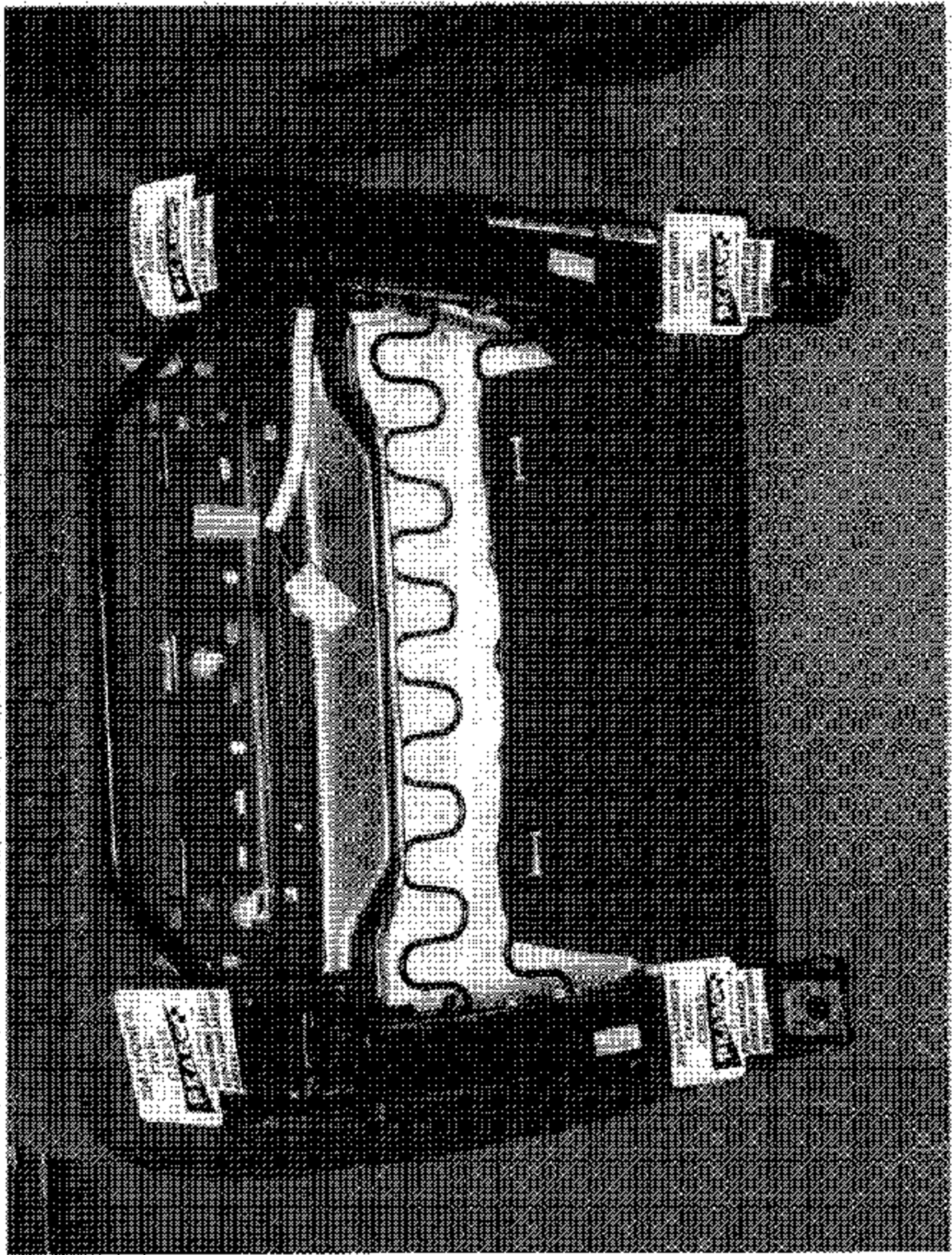


Figure A-65: Seat Anchors, Right Front Seat Overall, Pre-Test

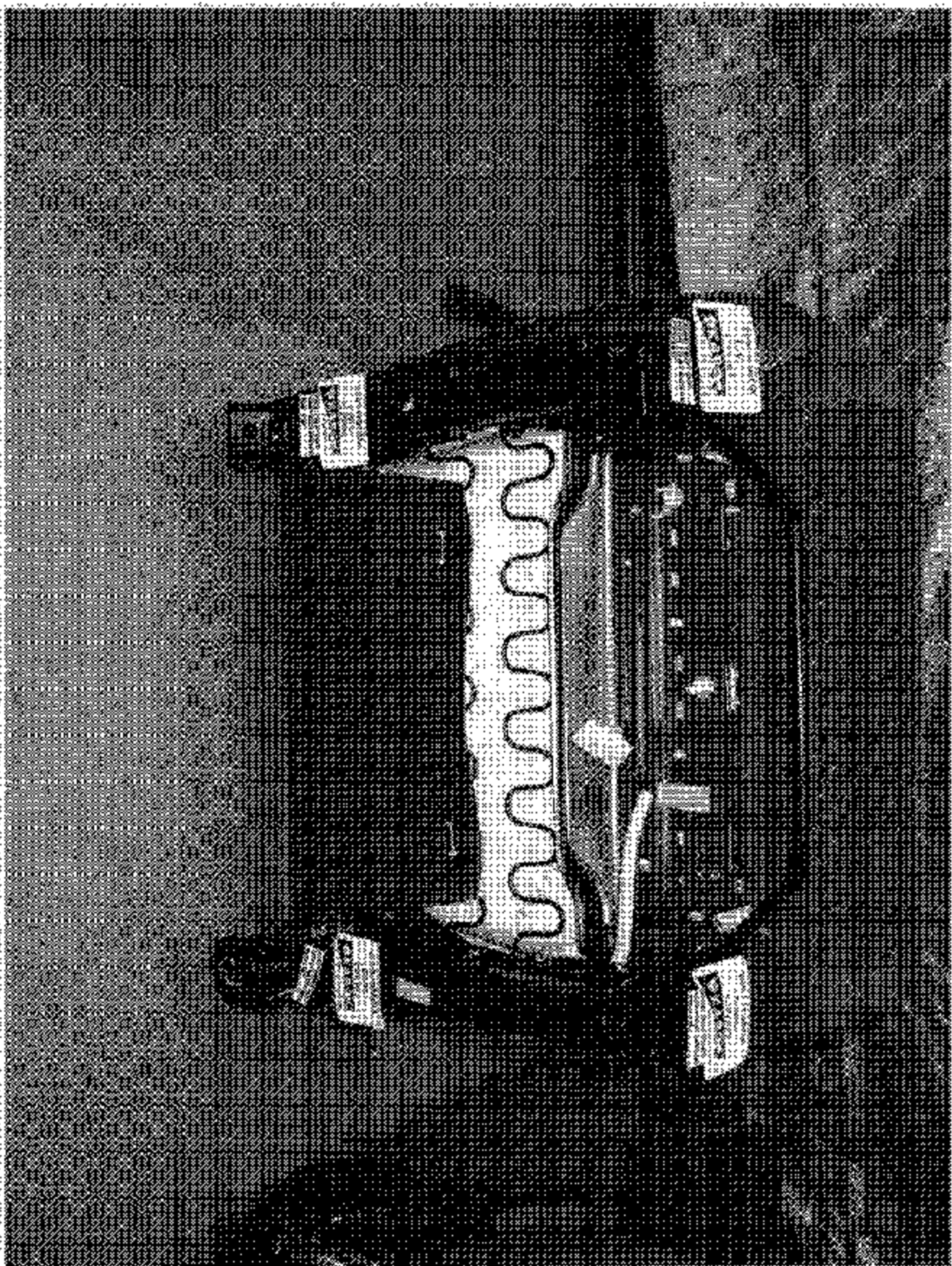


Figure A-66: Seat Anchors, Right Front Seat Overall, Post-Test



Figure A-67: Floor Pan Anchor, Right Front Seat, Pre-Test



Figure A-68: Floor Pan Anchor, Right Front Seat, Post-Test

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CIVIC

C35303

PLATE

EXPERIMENTAL

RIGHT FRONT SEAT

LEFT FRONT ANCHOR

PRETEST



Figure A-69. Seat Anchor, Right Front Seat, Pre-Test





Figure A-70: Seat Anchor, Right Front Seat, Post-Test

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**CIVIC**

**C35303**

**PIARC**

*Engineering*

**RIGHT FRONT SEAT  
RIGHT FRONT ANCHOR  
PRETEST**

Figure A-71: Floor Plan Anchor, Right Front Seat, Pre-Test



Figure A-72. Floor Pan Anchor, Right Front Seat, Post-Test

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CIVIC

C35303

**PIKARC**

Engineering, Inc.

**RIGHT FRONT SEAT**

**RIGHT FRONT ANCHOR**

**PRETEST**

SSAR

Figure A-73: Seal Anchor, Right Front Seat, Pre-Test



Figure A-74c Seat Anchor, Right Front Seat, Post-Test

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CIVIC

C35303

**OKARCO**  
*Engineering*

**RIGHT FRONT SEAT  
LEFT REAR ANCHOR  
PRETEST**

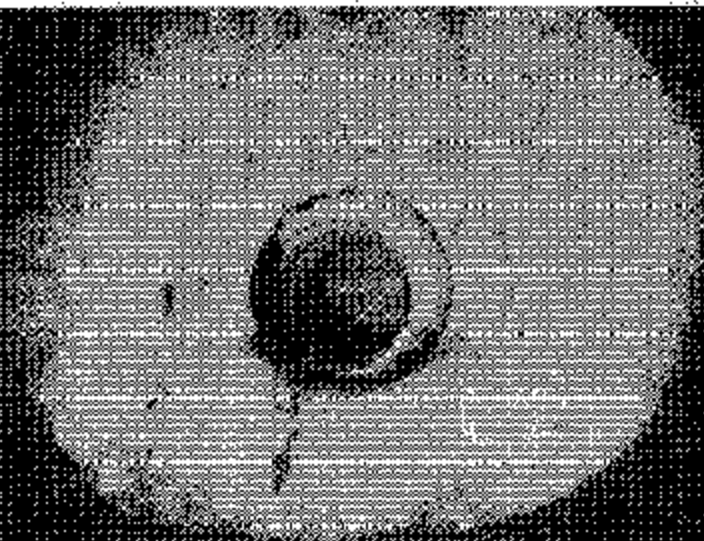


Figure A-75: Floor Pan Anchor, Right Front Seat, Pre-Test

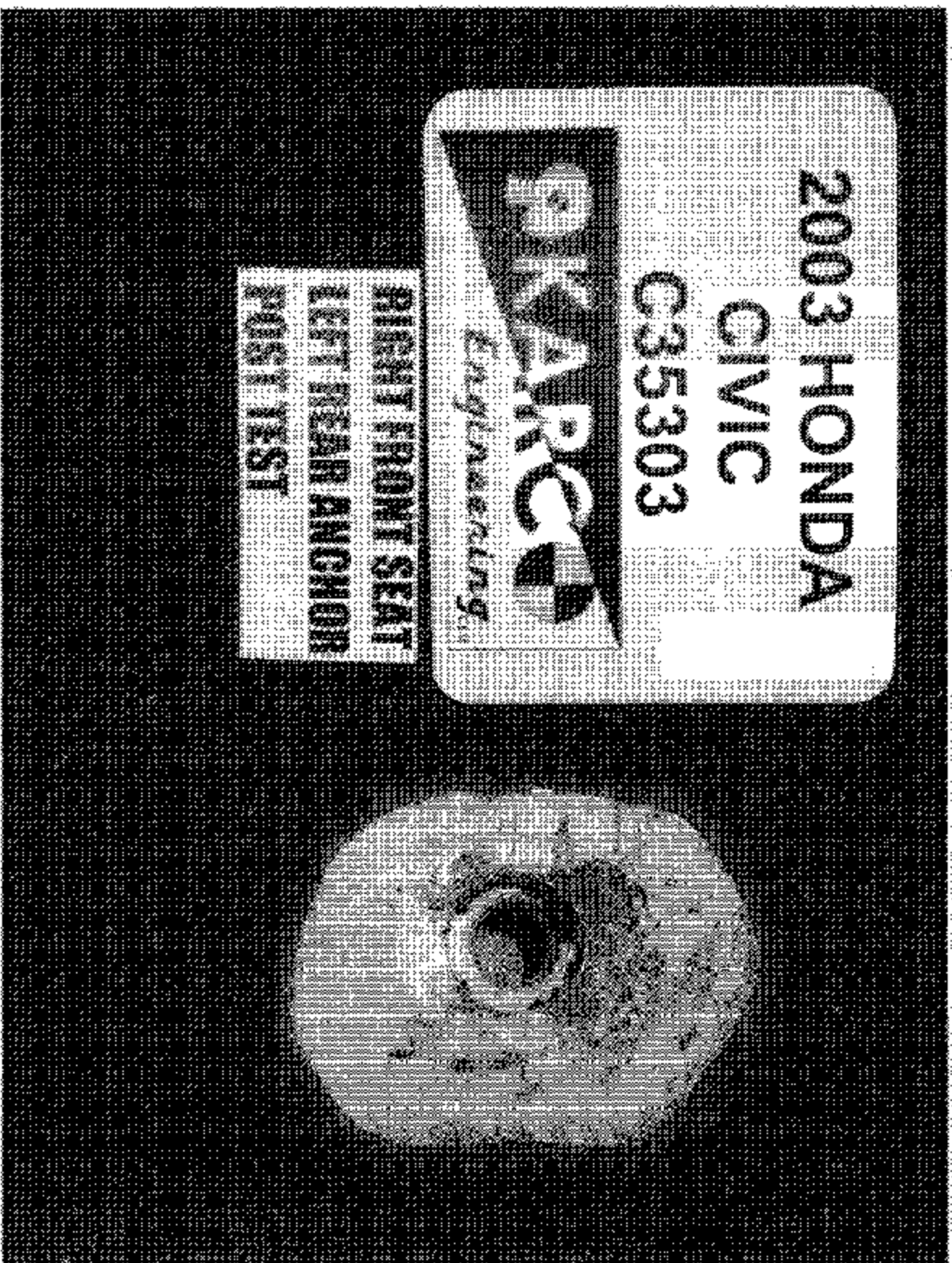


Figure A-76: Floor Pan Anchor, Right Front Seat, Post-Test

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CIVIC

C353303

**PKARC**

Engineering

RIGHT FRONT SEAT

LEFT BEAR ANCHOR

PRETEST

Figure A-77: Seal Anchor, Right Front Seat, Pre-Test





Figure A-78: Seat Anchor, Right Front Seat, Post-Test

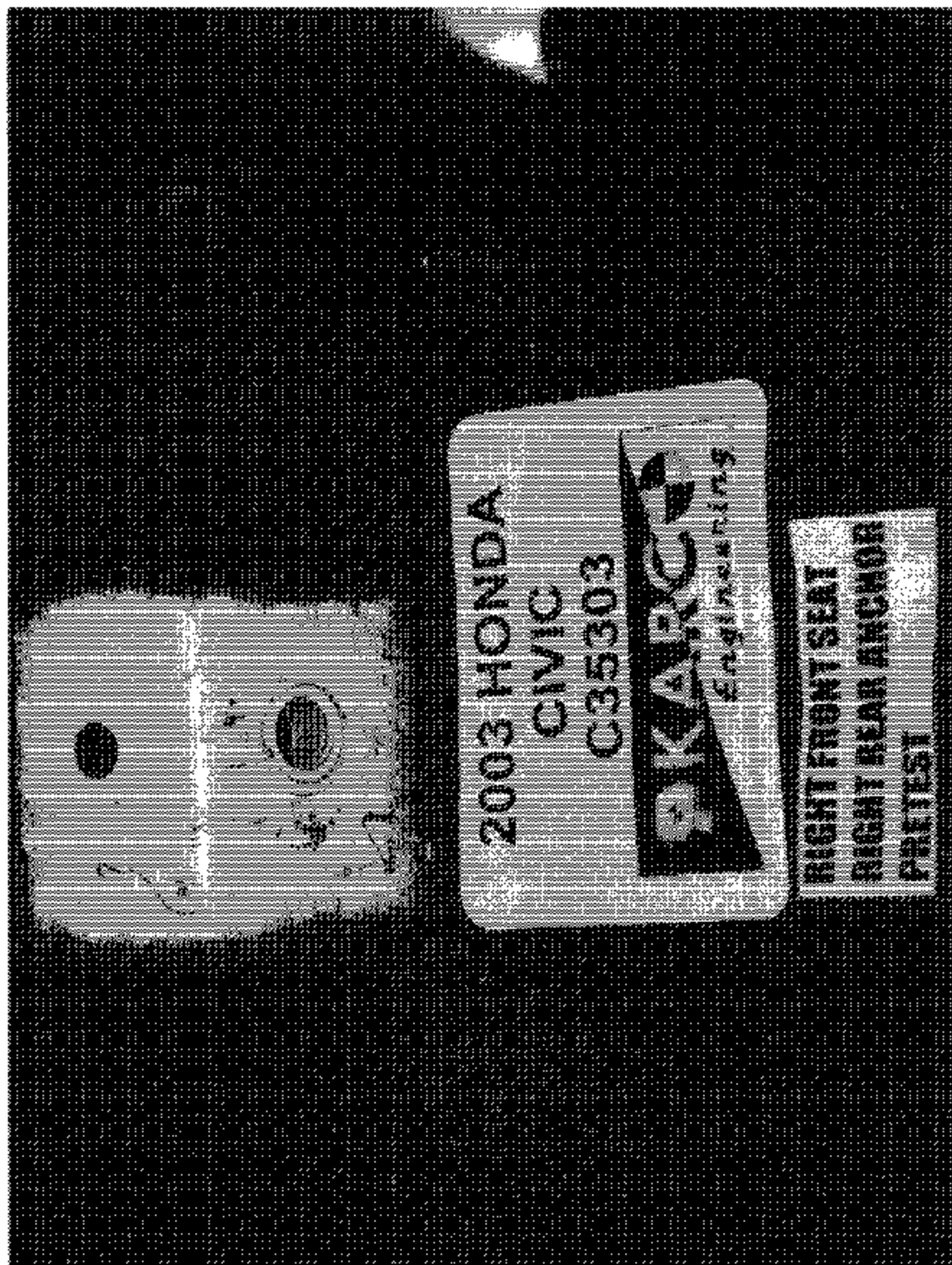


Figure A-79: Floor Pan Anchor, Right Front Seat, Pre-Test



Figure A-80: Floor Pan Anchor, Right Front Seat, Post-Test

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*Engineering...*

**RIGHT FRONT SEAT**

**RIGHT REAR ANCHOR**

**PRETEST**

Figure A-81: Seat Anchor, Right Front Seat, Pre-Test

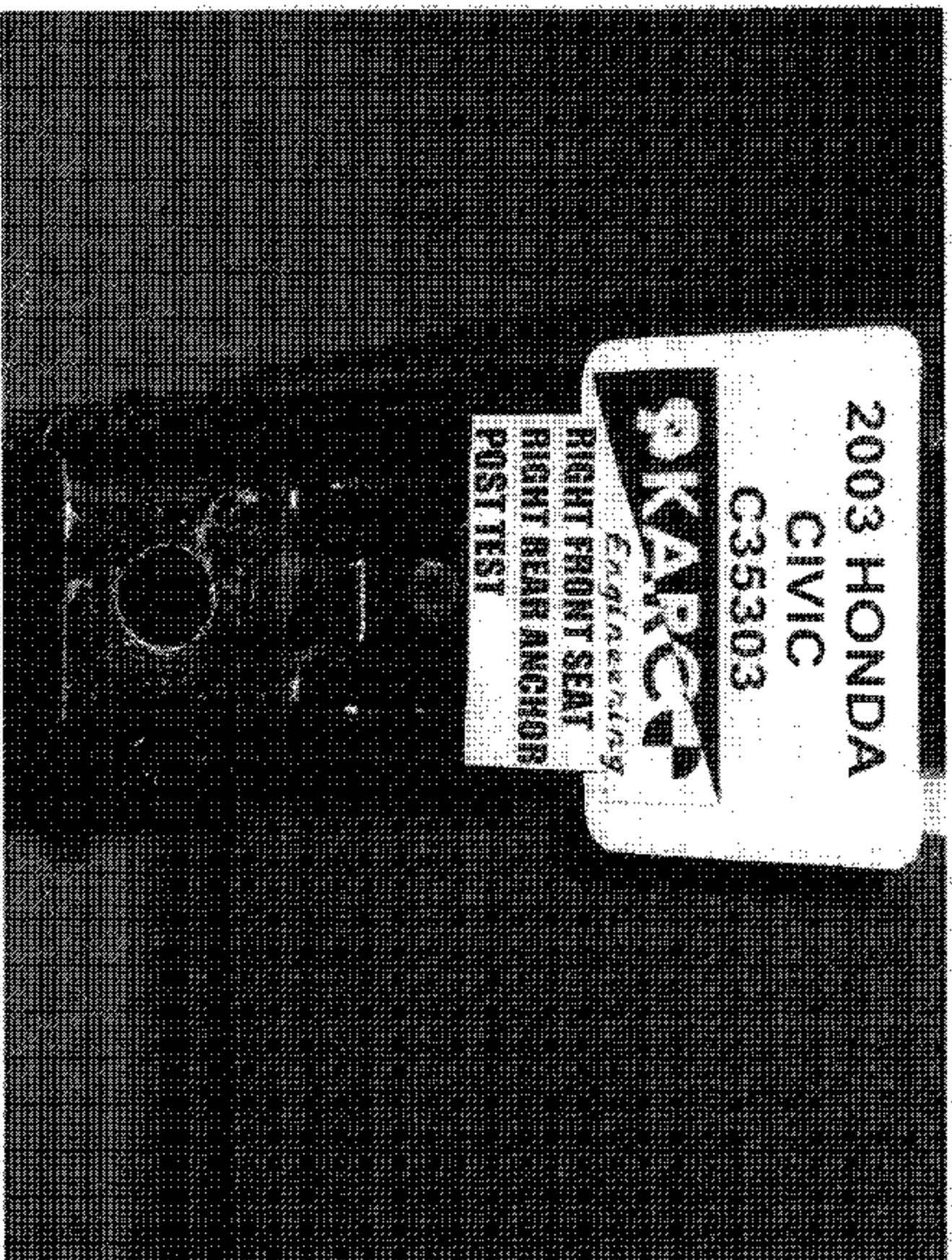


Figure A-82: Seal Anchor, Right Front Seat, Post-Test

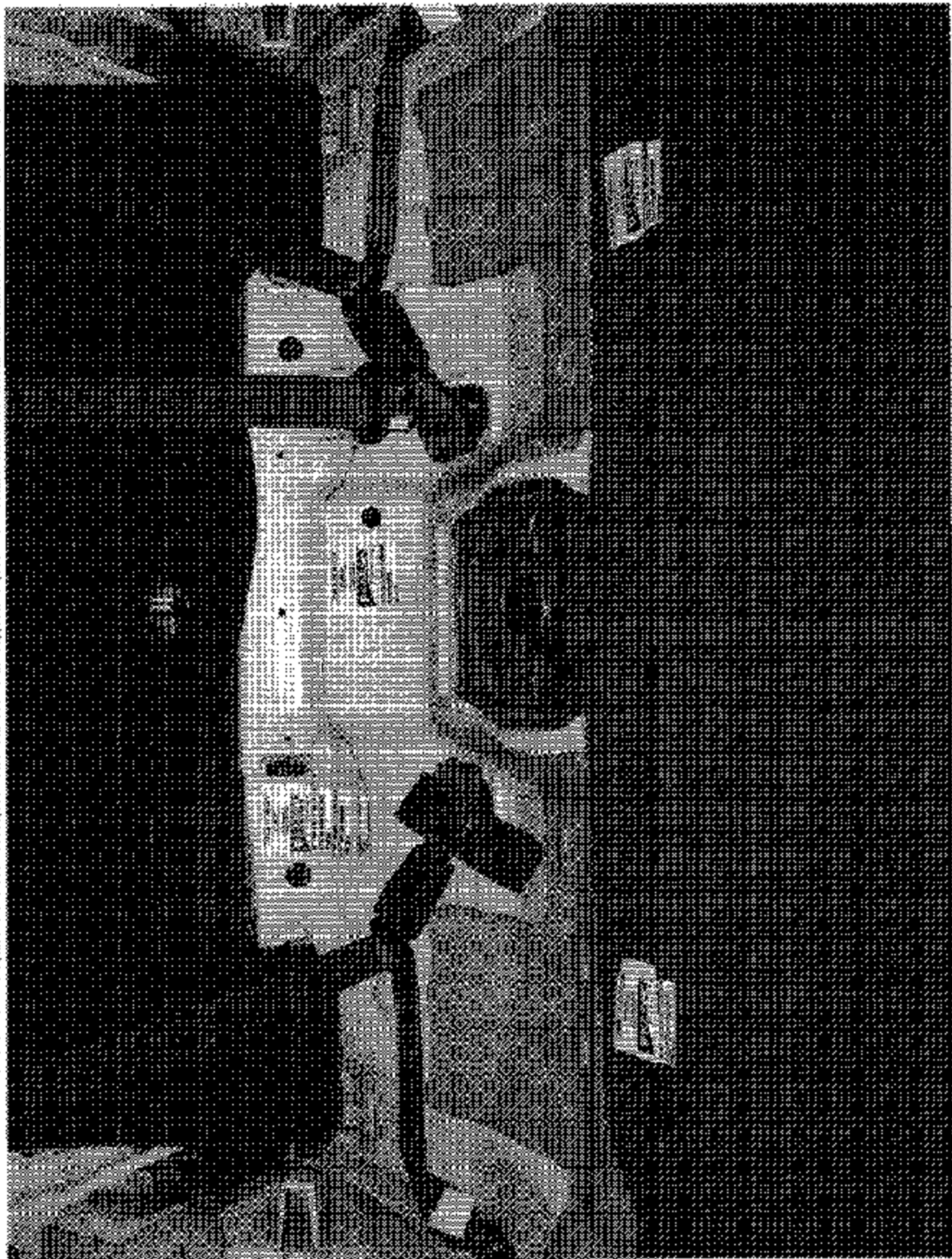


Figure A-83: Floor Pan Anchors, Rear Seat, Seat Cushion Overall, Pre-Test

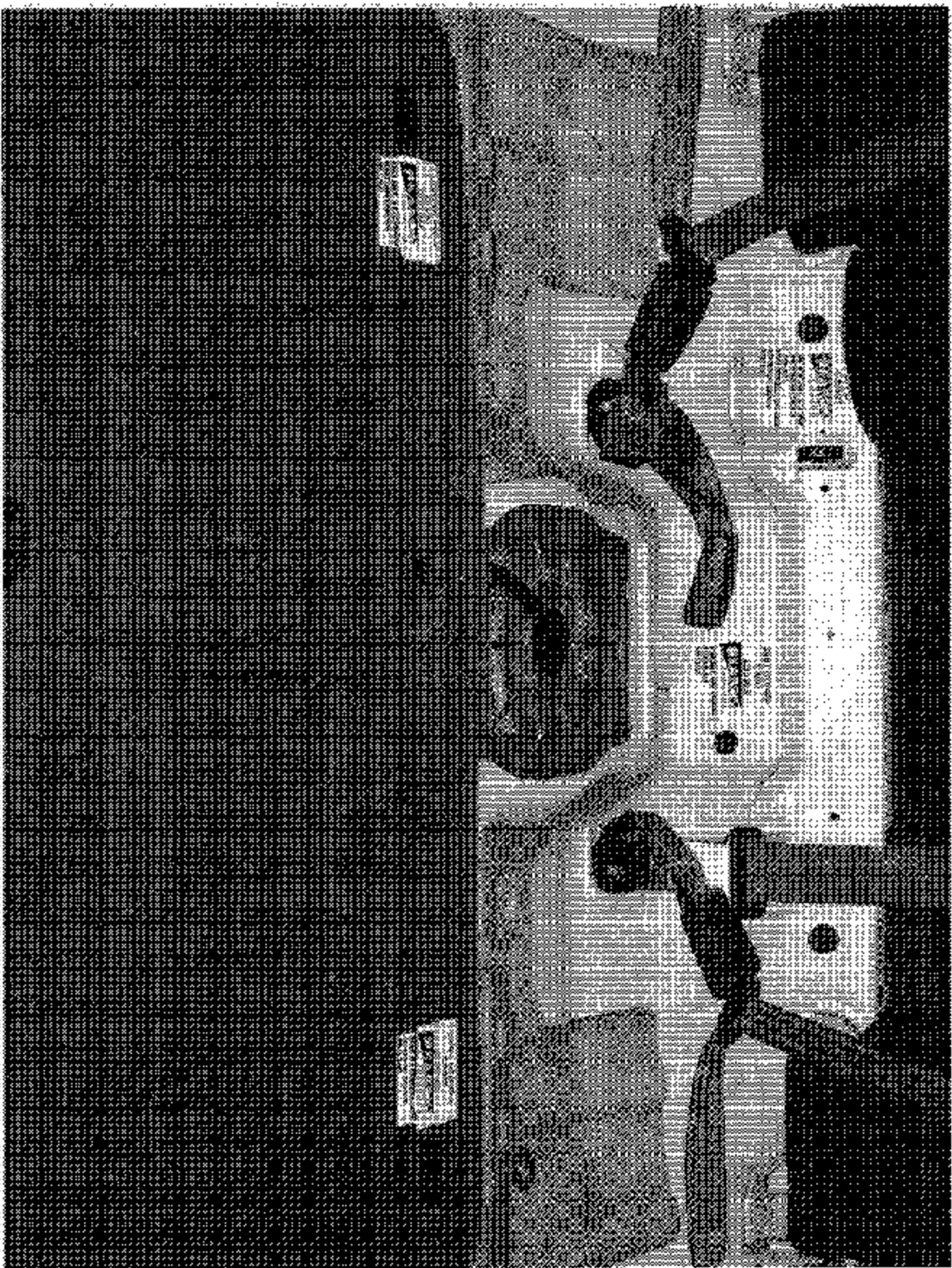


Figure A-84: Floor Pan Andriors, Rear Seat, Seat Cushion Overall, Post-Test

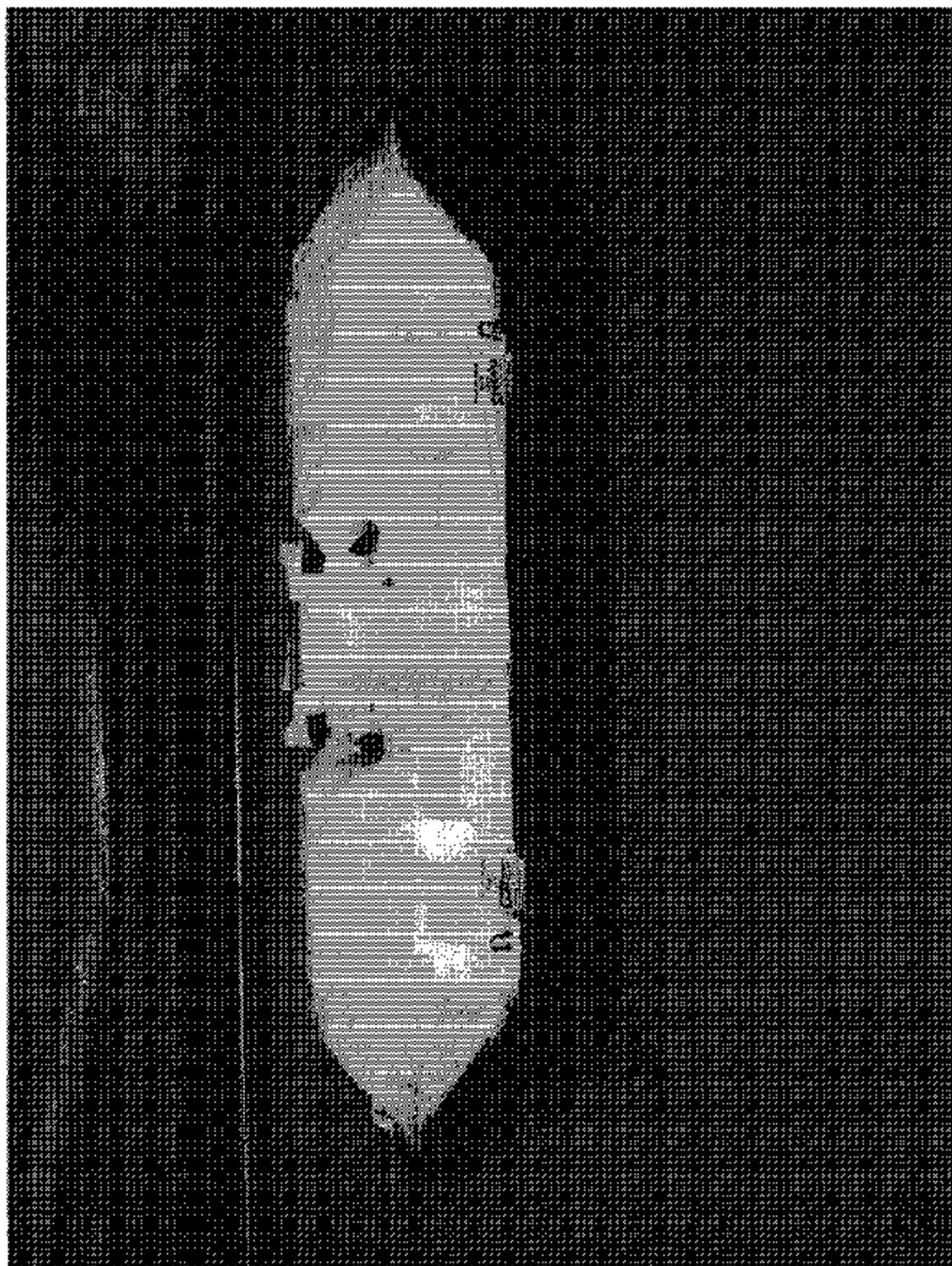


Figure A-85: Seat Anchors, Rear Seat, Seat Cushion Overall, Pre-Test



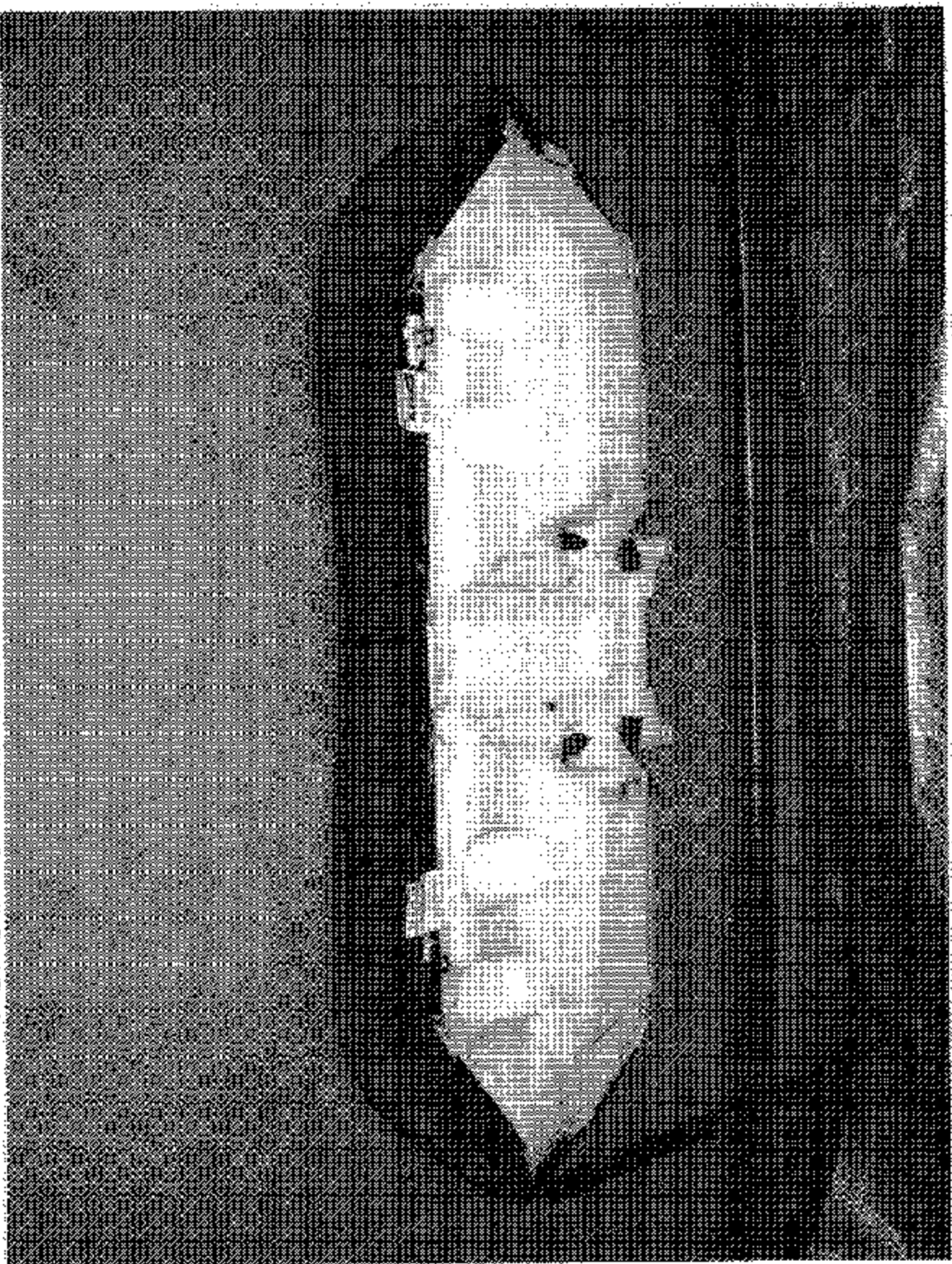


Figure A-86: Seat Anchors, Rear Seat, Seat Cushion Overall, Post-Test



Figure A-87: Floor Pan Anchor, Rear Seat, Seat Cushion, Pre-Test

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**OKAPEC**  
*Engineering*

**REAR SEAT, SEAT CUSHION  
LEFT FRONT ANCHOR  
POST TEST**

Figure A-88. Floor Pan Anchor, Rear Seat, Seat Cushion, Post-Test

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**PRETEST**  
Engineering  
REAR SEAT, SEAT CUSHION  
LEFT FRONT ANCHOR  
PRETEST

Figure A-89: Seat Anchor, Rear Seat, Seat Cushion, Pre-Test

Figure A-90: Seat Anchor, Rear Seat, Seat Cushion, Post-Test



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*Engineering*

REAR SEAT, SEAT CUSHION

RIGHT FRONT ANCHOR

PRETEST

Figure A-91: Floor Pan Anchor, Rear Seat, Seat Cushion, Pre-Test

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**OKAPCO**

*Engineering, Inc.*

**REAR SEAT, SEAT CUSHION**

**RIGHT FRONT ANCHOR**

**POST TEST**

Figure A-92: Floor Pan Anchor, Rear Seat, Seat Cushion, Post-Test



Figure A-93: Seat Anchor, Rear Seat, Seat Cushion, Pre-Test



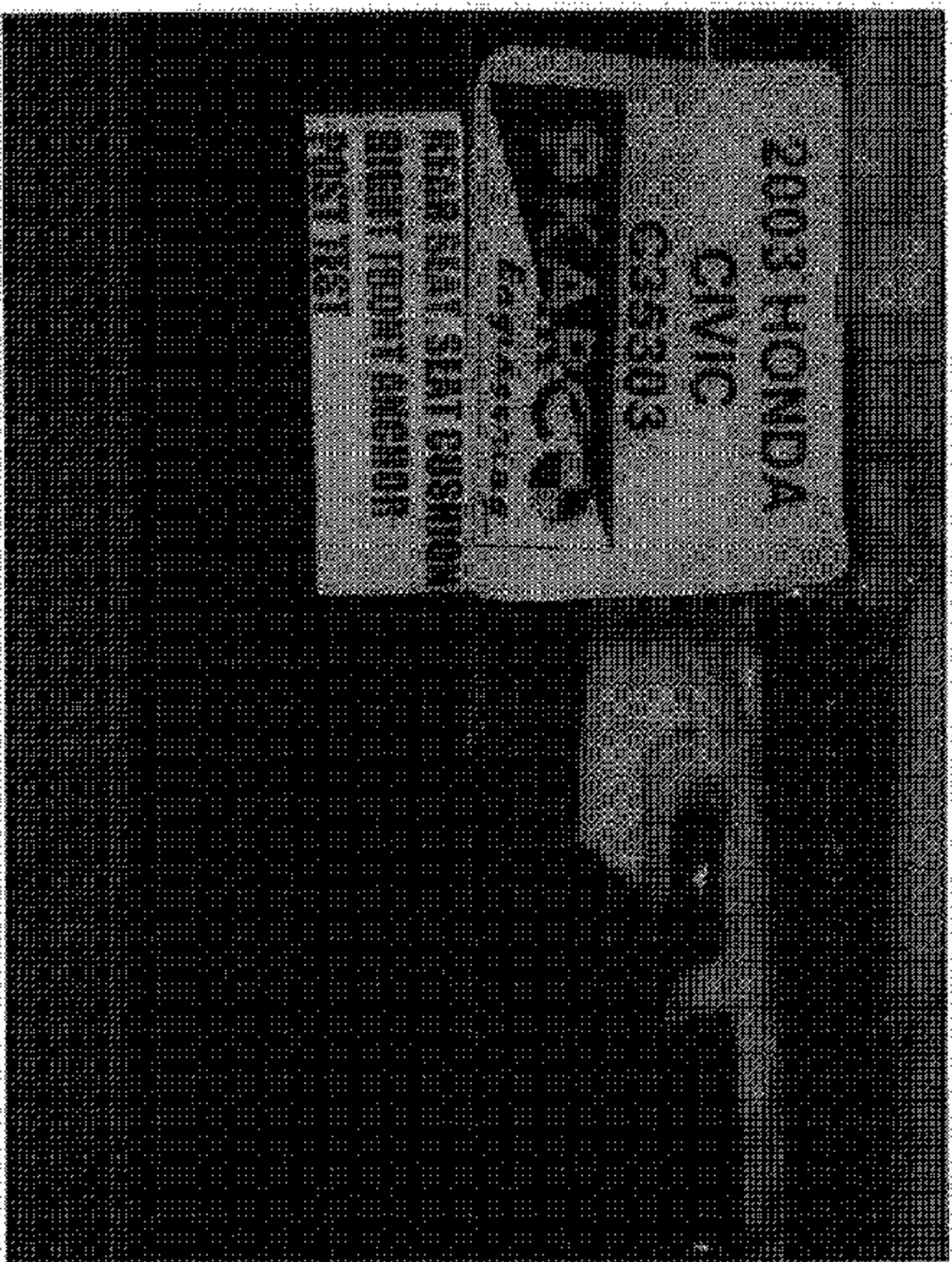


Figure A-94: Seat Anchor, Rear Seat, Seat Cushion, Post-Test

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REAR SEAT SEAT CUSHION

REAR ANCHOR

PRETEST

Figure A-95: Floor Pan Anchor, Rear Seat, Seat Cushion, Pre-Test

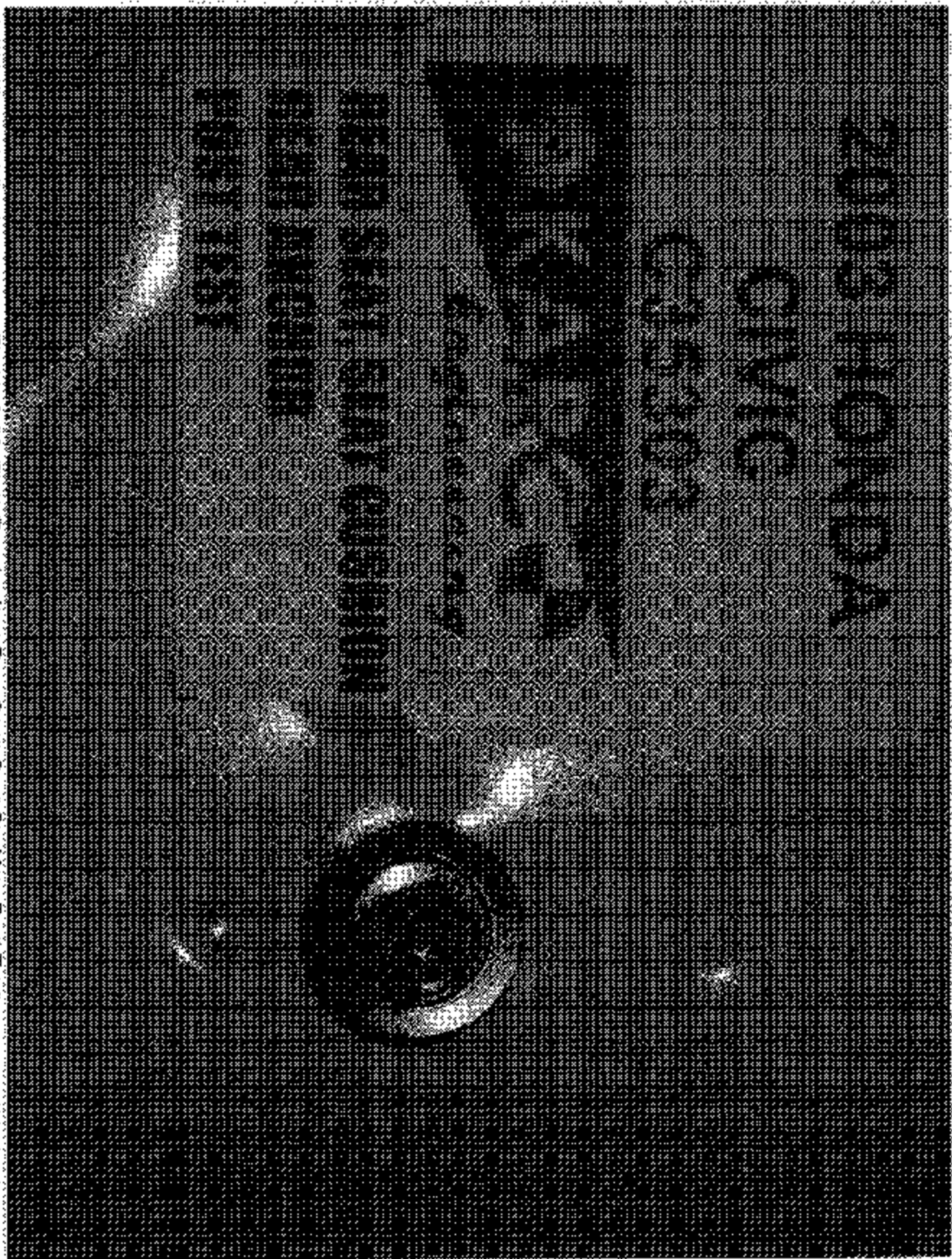


Figure A-96: Floor Pan Anchor, Rear Seat, Seat Cushion, Post-Test

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Engineering

**RIGHT REAR SEAT, SEAT CUSHION**

**REAR ANCHOR**

**PRETEST**

Figure A-97: Seat Anchor, Rear Seat, Seat Cushion, Pre-Test

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Engineering  
REAR SEAT, SEAT CUSHION  
REAR ANCHOR  
POST TEST

Figure A-98: Seat Anchor, Rear Seat, Seat Cushion, Post-Test

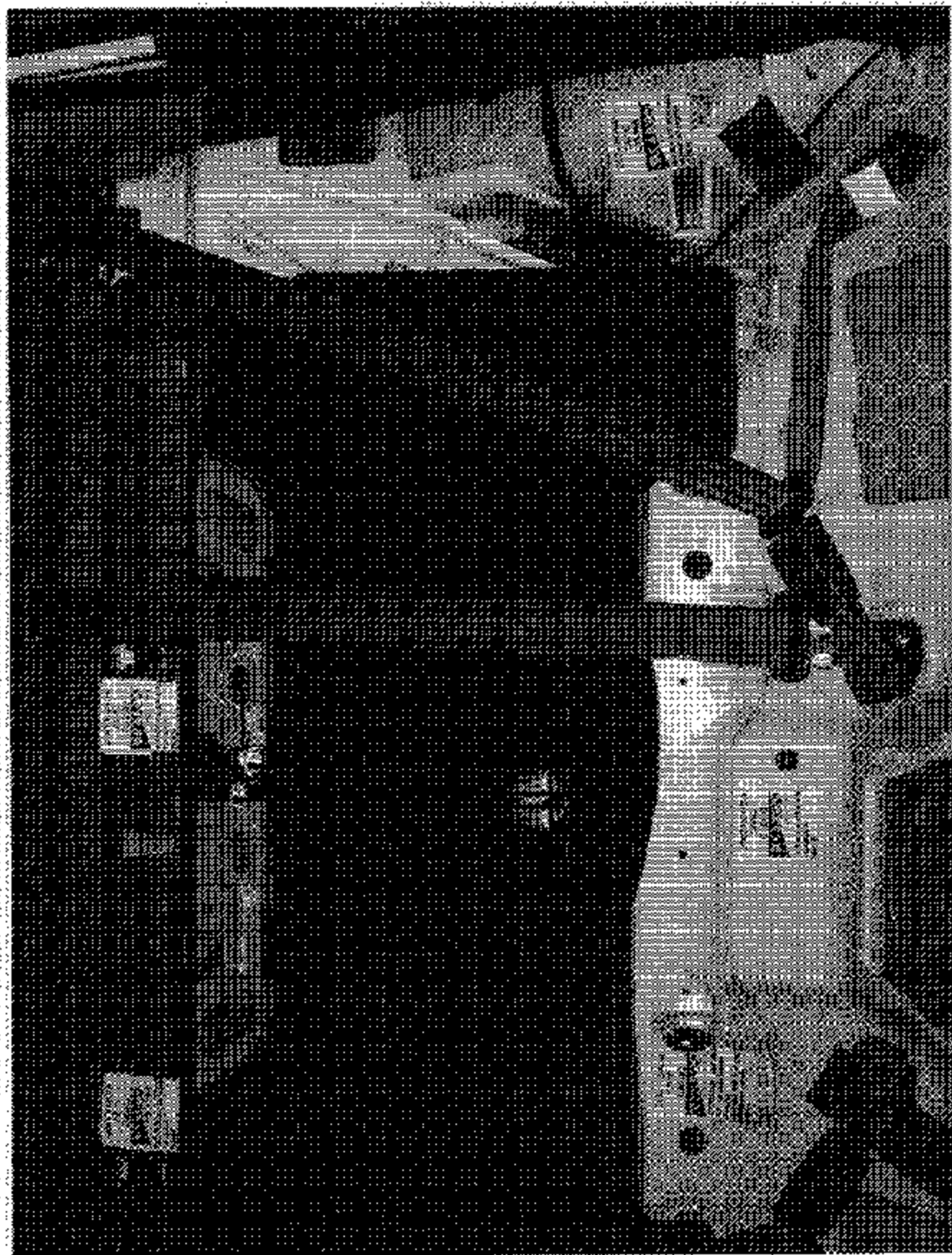


Figure A-99: Floor Pan Anchors, Left Rear Seat, Seat Back Overall, Pre-Test

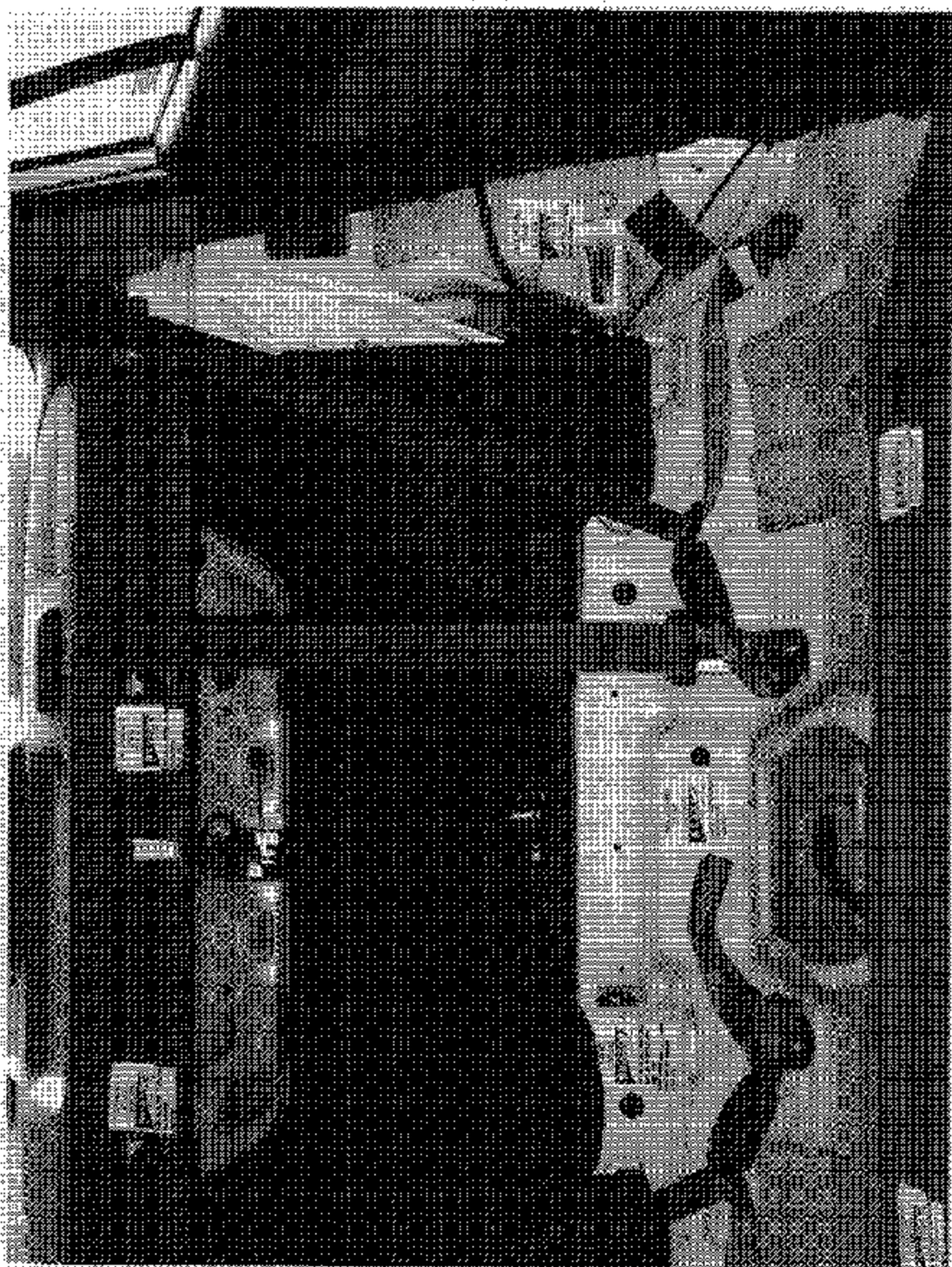


Figure A-100: Floor Pan Anchors, Left Rear Seat, Seat Back Overall, Post-Test

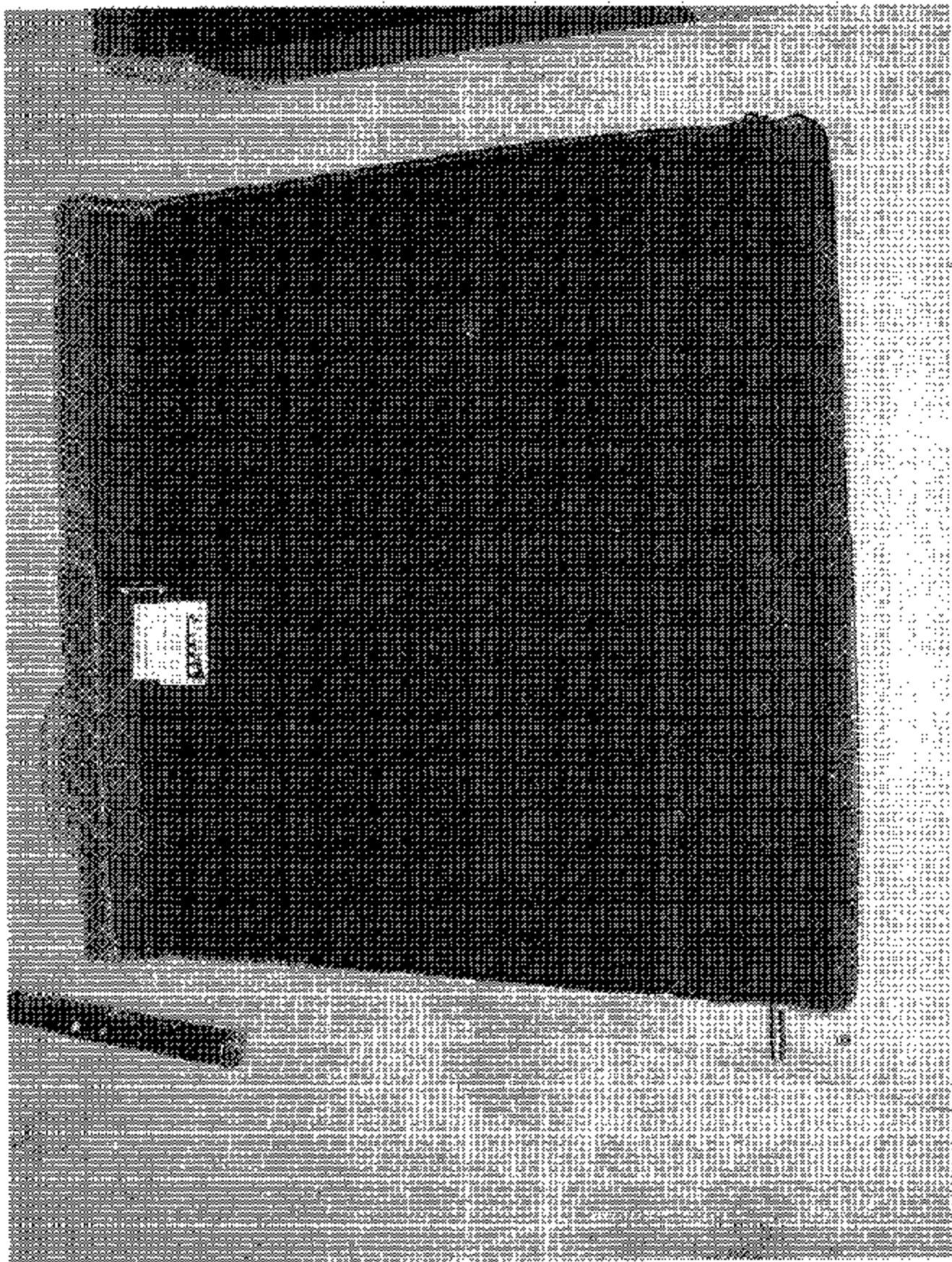


Figure A-101: Seat Anchors, Left Rear Seat, Seat Back Overall, Pre-Test



Figure A-102: Seat Anchors, Left Rear Seat, Seat Back Overall, Post-Test

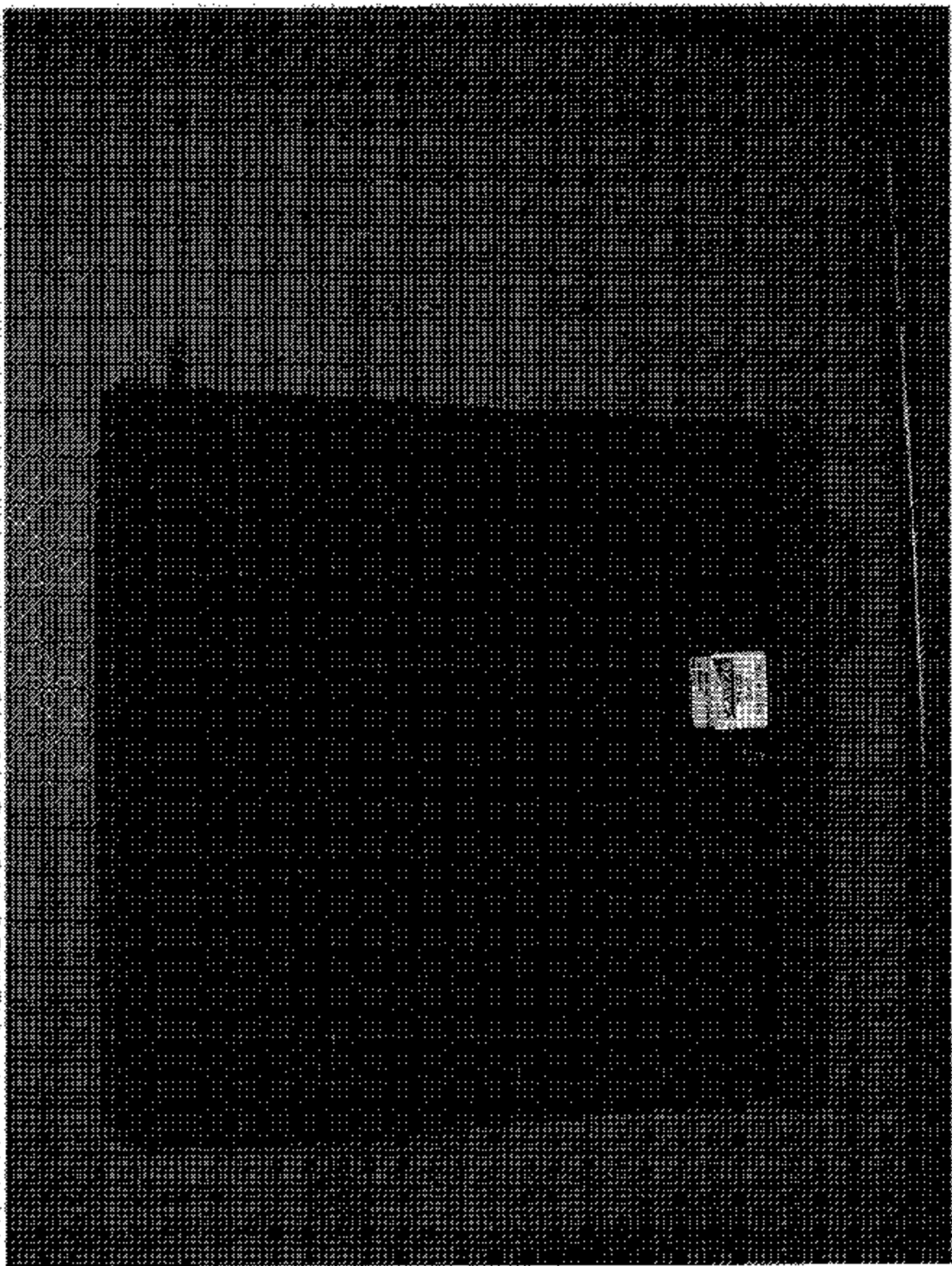




Figure A-103: Floor Pan Anchor, Left Rear Seat, Seat Back, Pre-Test

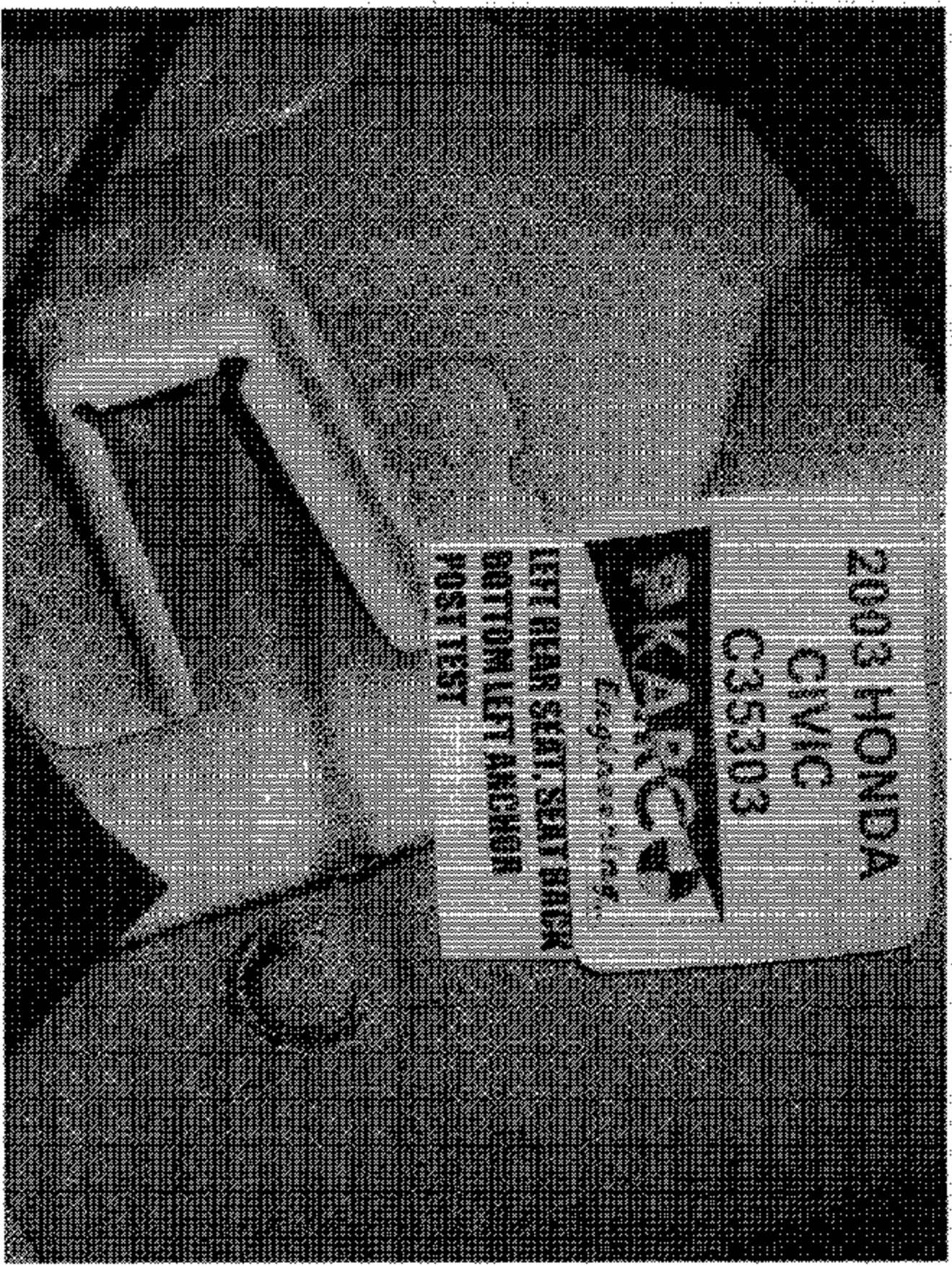


Figure A-104: Floor Pan Anchor, Left Rear Seat, Seat Back, Post-Test

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LEFT REAR SEAT, SEAT BACK

BOTTOM LEFT ANCHOR

PRETEST

Figure A-105: Seat Anchor, Left Rear Seat, Seat Back, Pre-Test

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LEFT REAR SEAT, SEAT BACK  
BOTTOM LEFT ANCHOR  
POST TEST

Figure A-106: Seat Anchor, Left Rear Seat, Seat Back, Post-Test

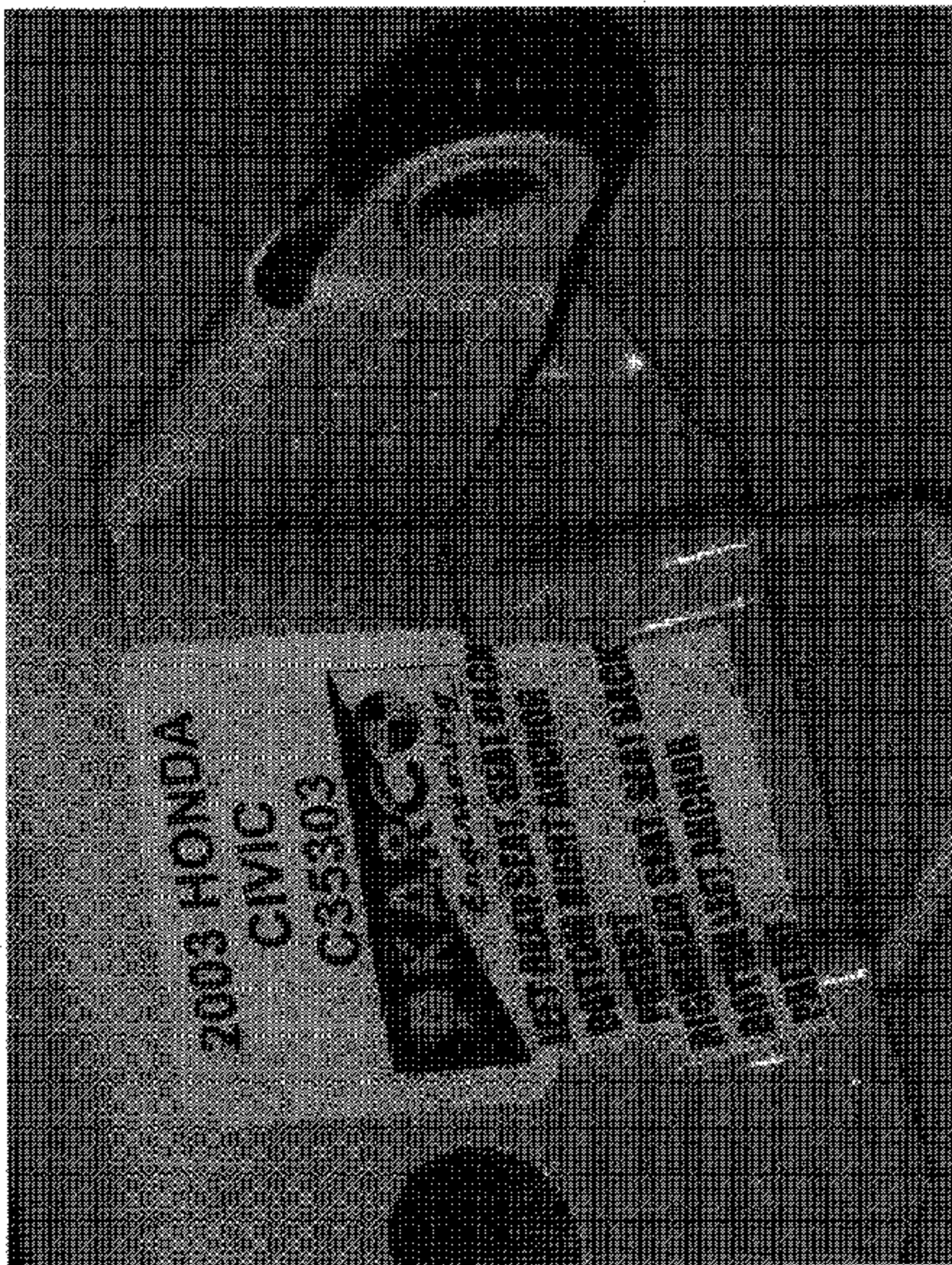


Figure A-107: Floor Pan Anchor, Left Rear Seat, Seat Back, Pro-Test

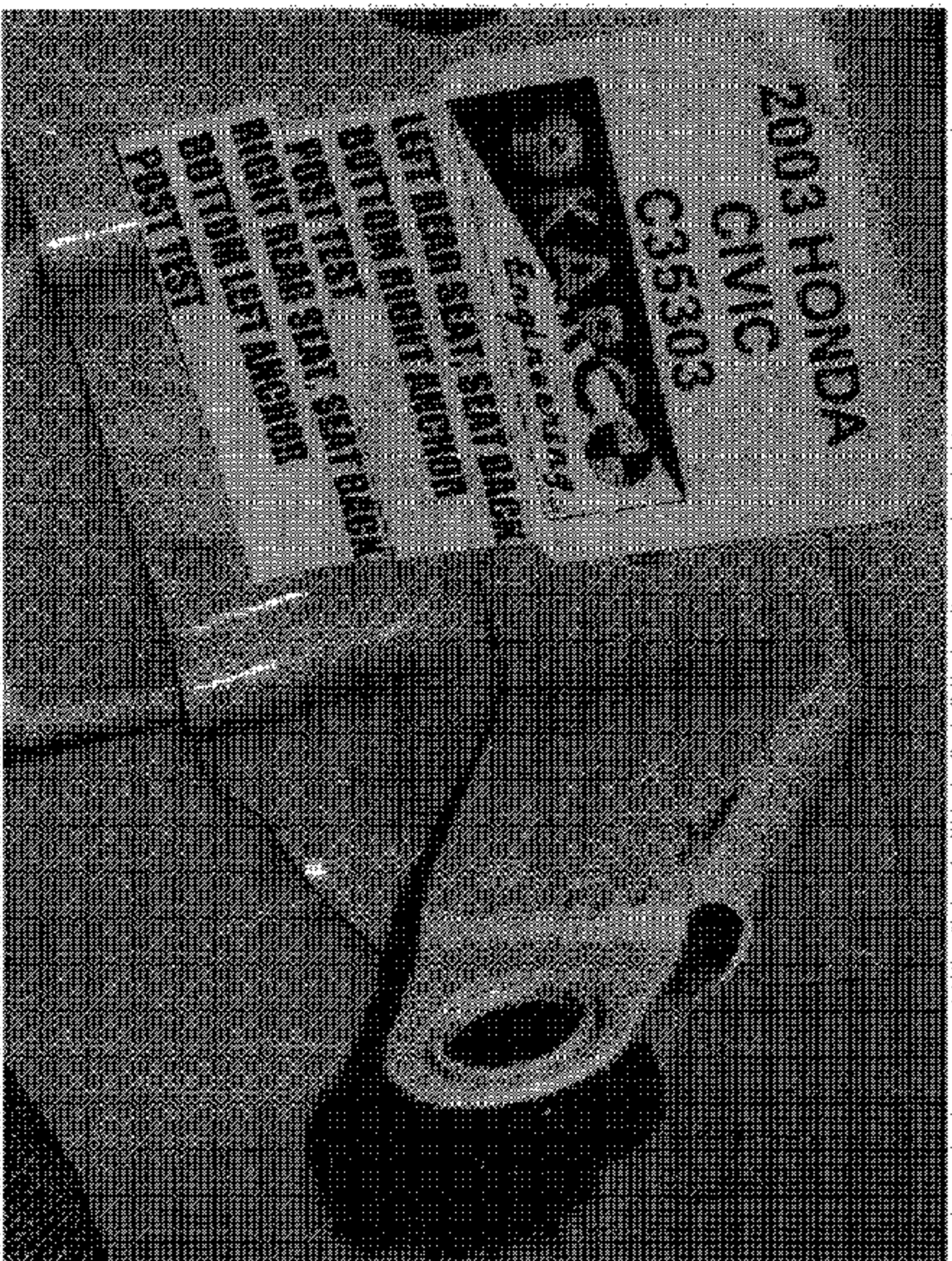


Figure A-108. Floor Pan Anchor, Left Rear Seat, Seat Back, Post-Test

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**PIKARCO**

Engineering

LEFT REAR SEAT, SEAT BACK

BOTTOM RIGHT ANCHOR

PRETEST



Figure A-109: Seat Anchor, Left Rear Seat, Seat Back, Pre-Test



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LEFT REAR SEAT, SEAT BACK

BOTTOM RIGHT ANCHOR

POST TEST



Figure A-110: Seat Anchor, Left Rear Seat, Seat Back, Post-Test

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**OKARCT**

*Engineering*

**LEFT REAR SEAT, SEAT BACK**

**TOP ANCHOR**

**PRETEST**

Figure A-111: Floor Pan Anchor, Left Rear Seat, Seat Back, Pre-Test

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**EXARC**

Engineering

LEFT REAR SEAT, SEAT BACK

TOP ANCHOR

POST TEST

Figure A-112: Floor Pan Anchor, Left Rear Seat, Seat Back, Post-Test

**LEFT REAR SEAT, SEAT BACK  
TOP ANCHOR  
PRETEST**

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Figure A-113: Seat Anchor, Left Rear Seat, Seat Back, Pre-Test

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C35303

**KARCA**

*Engineering*

LEFT REAR SEAT, SEAT BACK  
TOP ANCHOR  
POST TEST

Figure A-114: Floor Pan Anchor, Left Rear Seat, Seat Back, Post-Test



Figure A-115: Floor Pan Anchors, Right Rear Seat, Seat Back Overall, Pre-Test

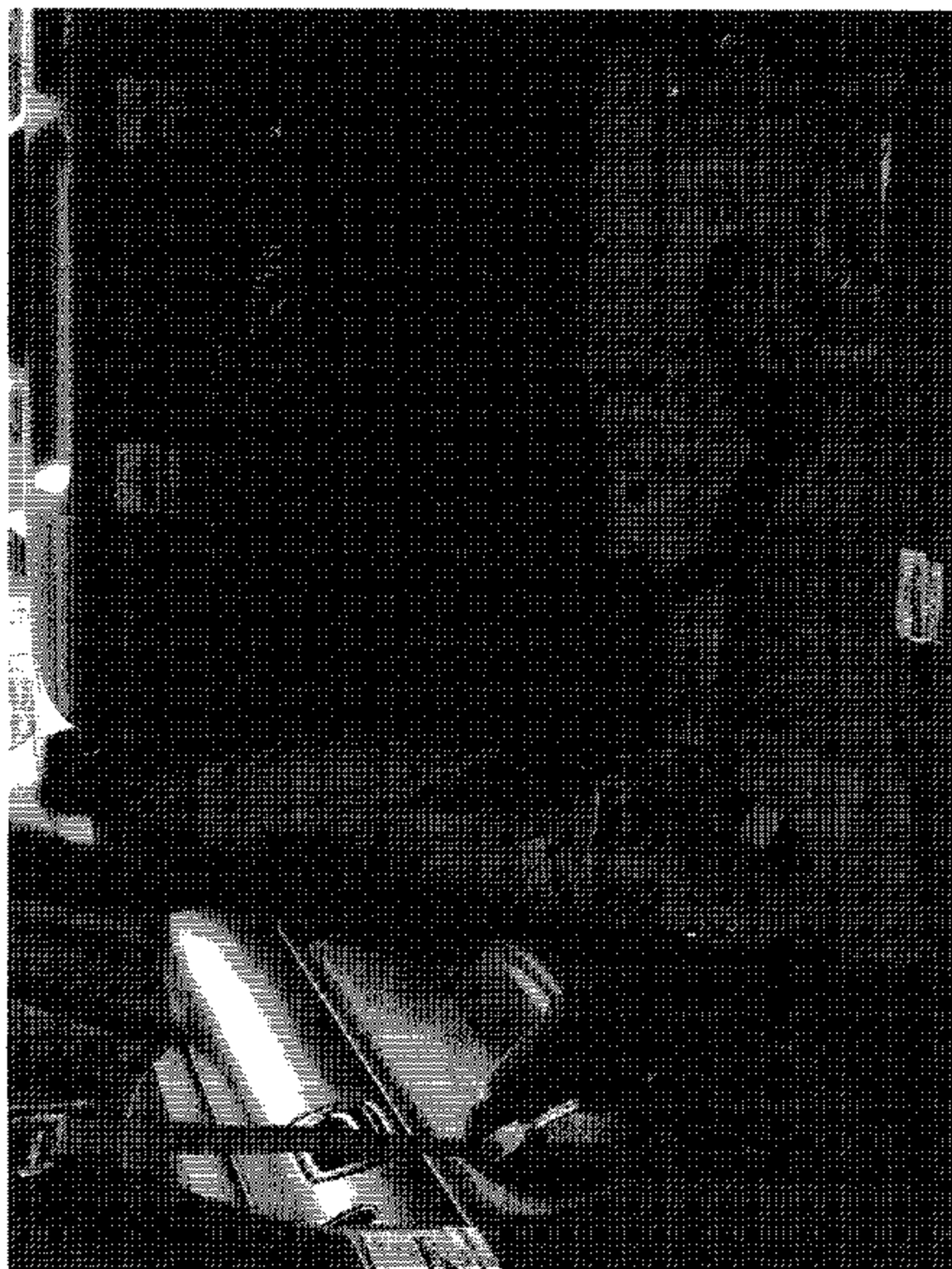


Figure A-116: Floor Pan Anchors, Right Rear Seat, Seat Back Overall, Post-Test

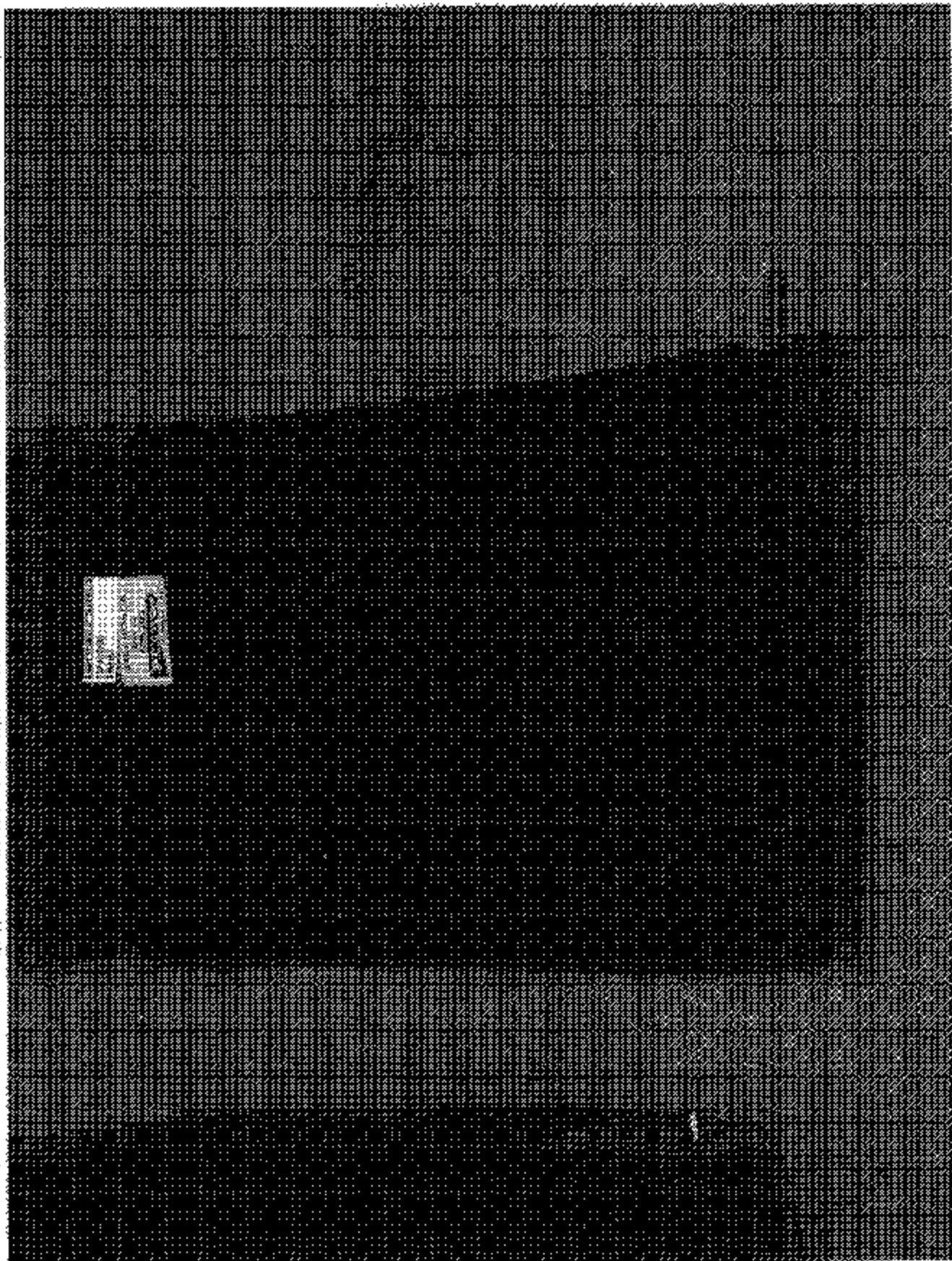


Figure A-117: Seat Anchors, Right Rear Seat, Seat Back Overall, Pre-Test



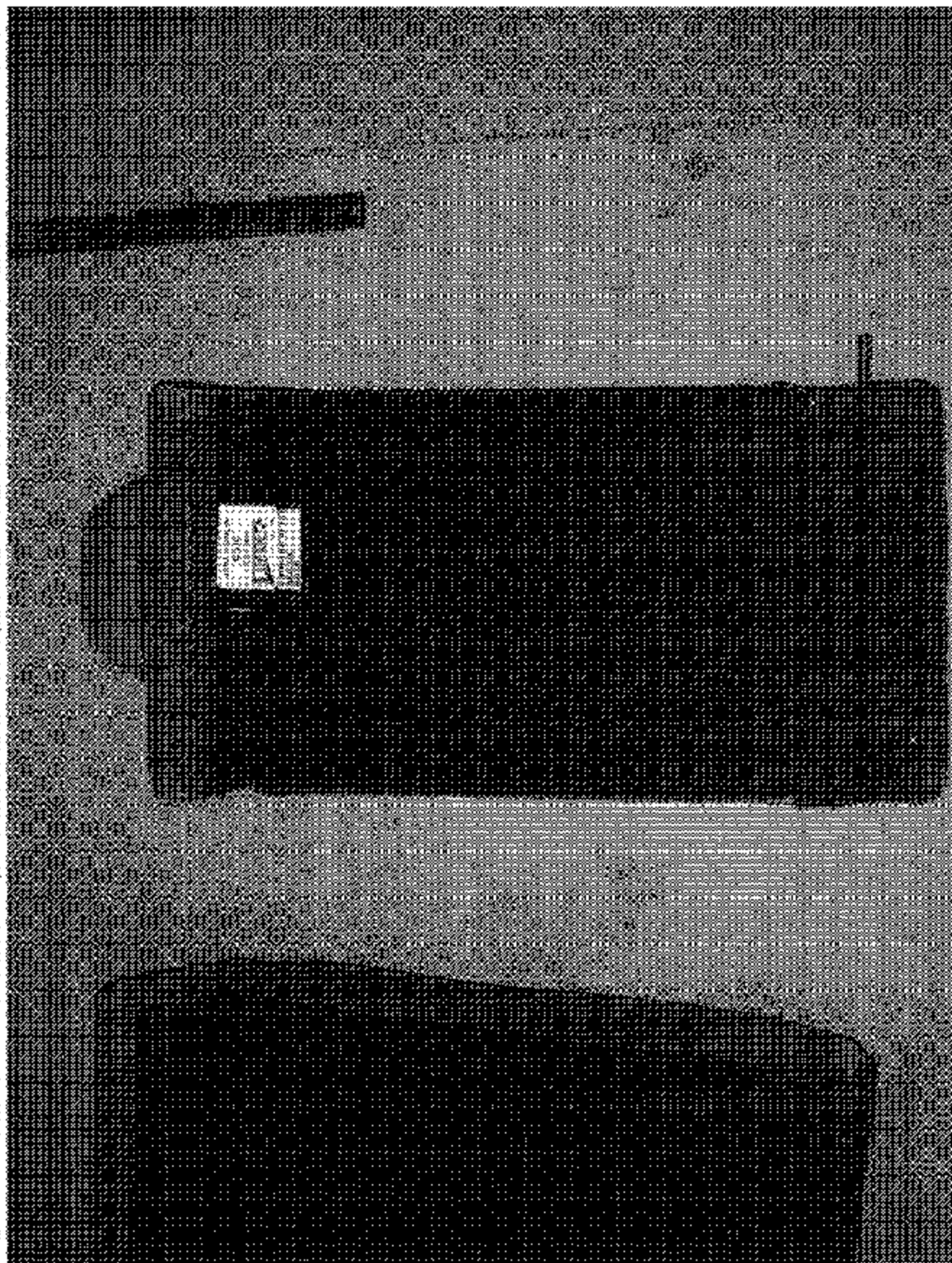


Figure A-118: Seat Anchors, Right Rear Seat, Seal Back Overall, Post-Test

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Figure A-118: Floor Pan Anchor, Right Rear Seat, Seat Back, Pre-Test



Figure A-120: Floor Pan Anchor, Right Rear Seat, Seat Back, Post-Test

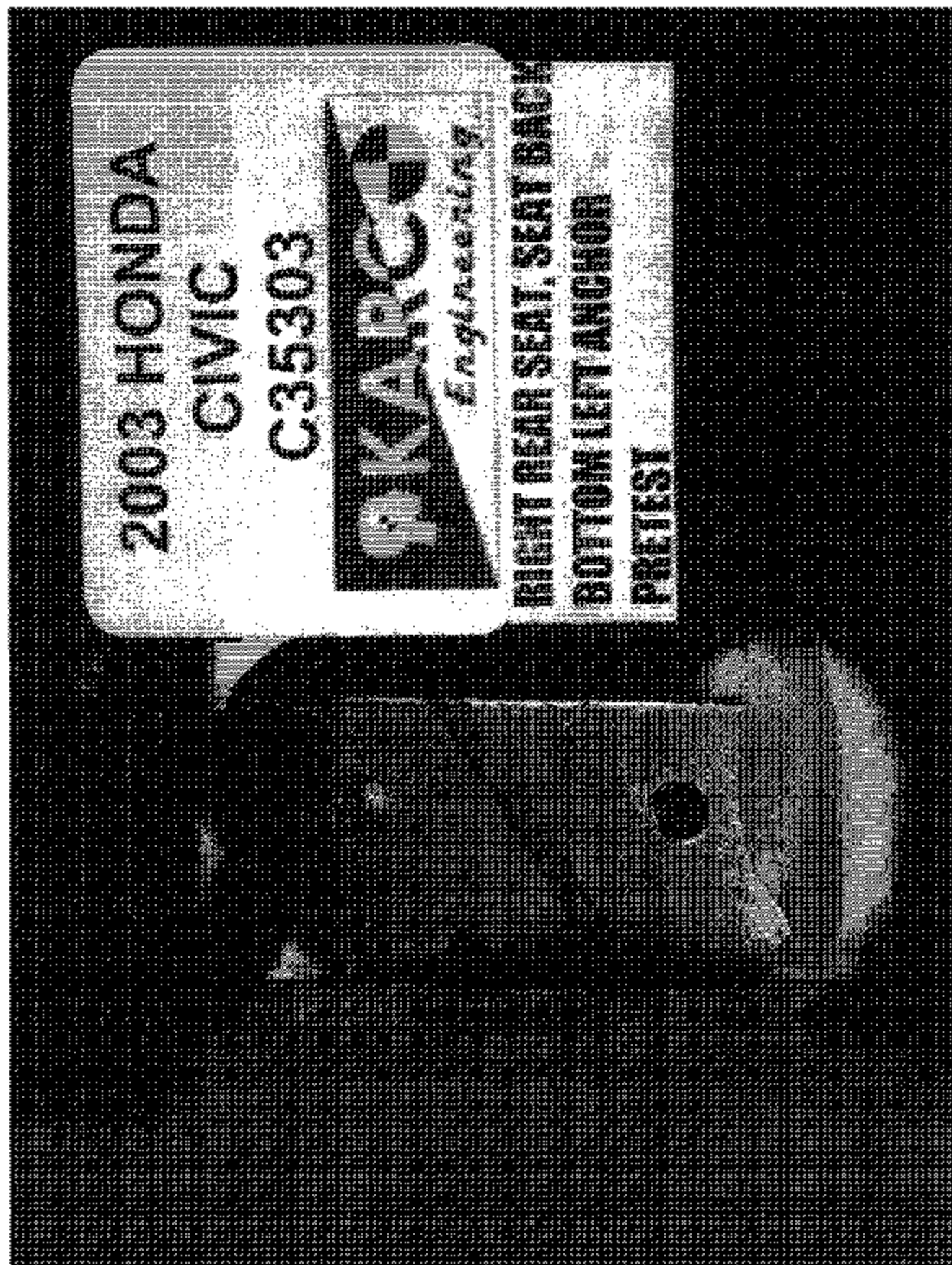


Figure A-121: Seat Anchor, Right Rear Seat, Seat Back, Pre-Test

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**RIGHT REAR SEAT, SEAT BACK  
BOTTOM LEFT ANCHOR  
POST TEST**

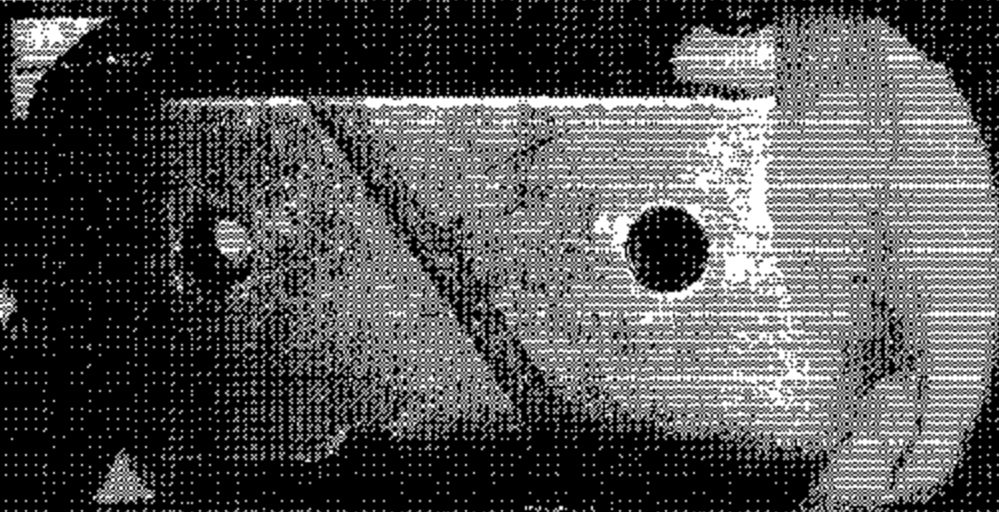


Figure A-122: Seat Anchor, Right Rear Seat, Seat Back, Post-Test

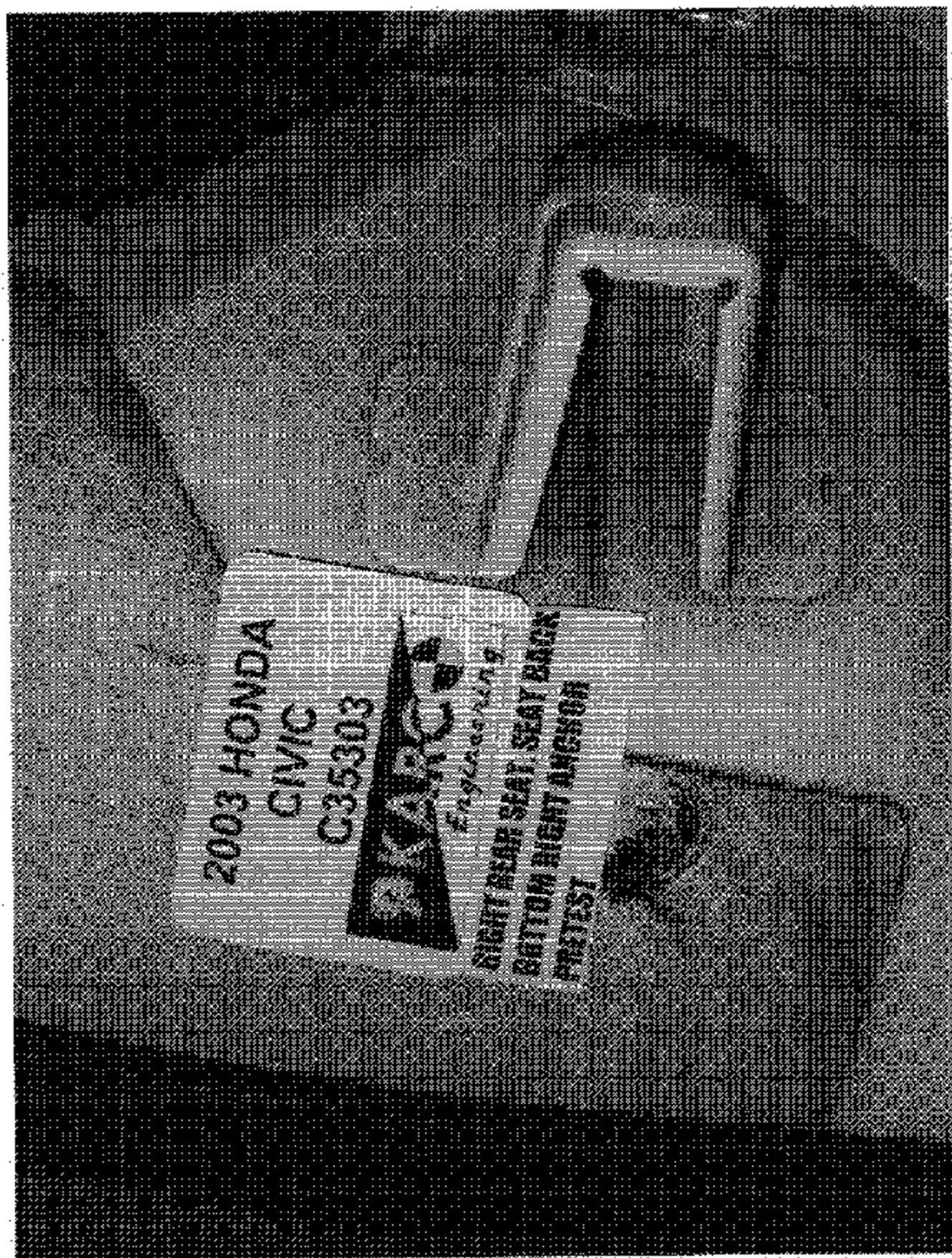


Figure A-123: Floor Pan Anchor, Right Rear Seat, Seat Back, Pre-Test

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RIGHT REAR SEAT, SEAT BACK  
BOTTOM RIGHT ANCHOR  
POST TEST



Figure A-124: Floor Pan Anchor, Right Rear Seat, Seat Back, Post-Test

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RIGHT REAR SEAT, SEAT BACK

BOTTOM RIGHT ANCHOR

PRETEST

Figure A-125: Seat Anchor, Right Rear Seat, Seat Back, Pre-Test





Figure A-126: Seat Anchor, Right Rear Seat, Seat Back, Post-Test



Figure A-127: Floor Pan Anchor, Right Rear Seat, Seat Back, Pre-Test

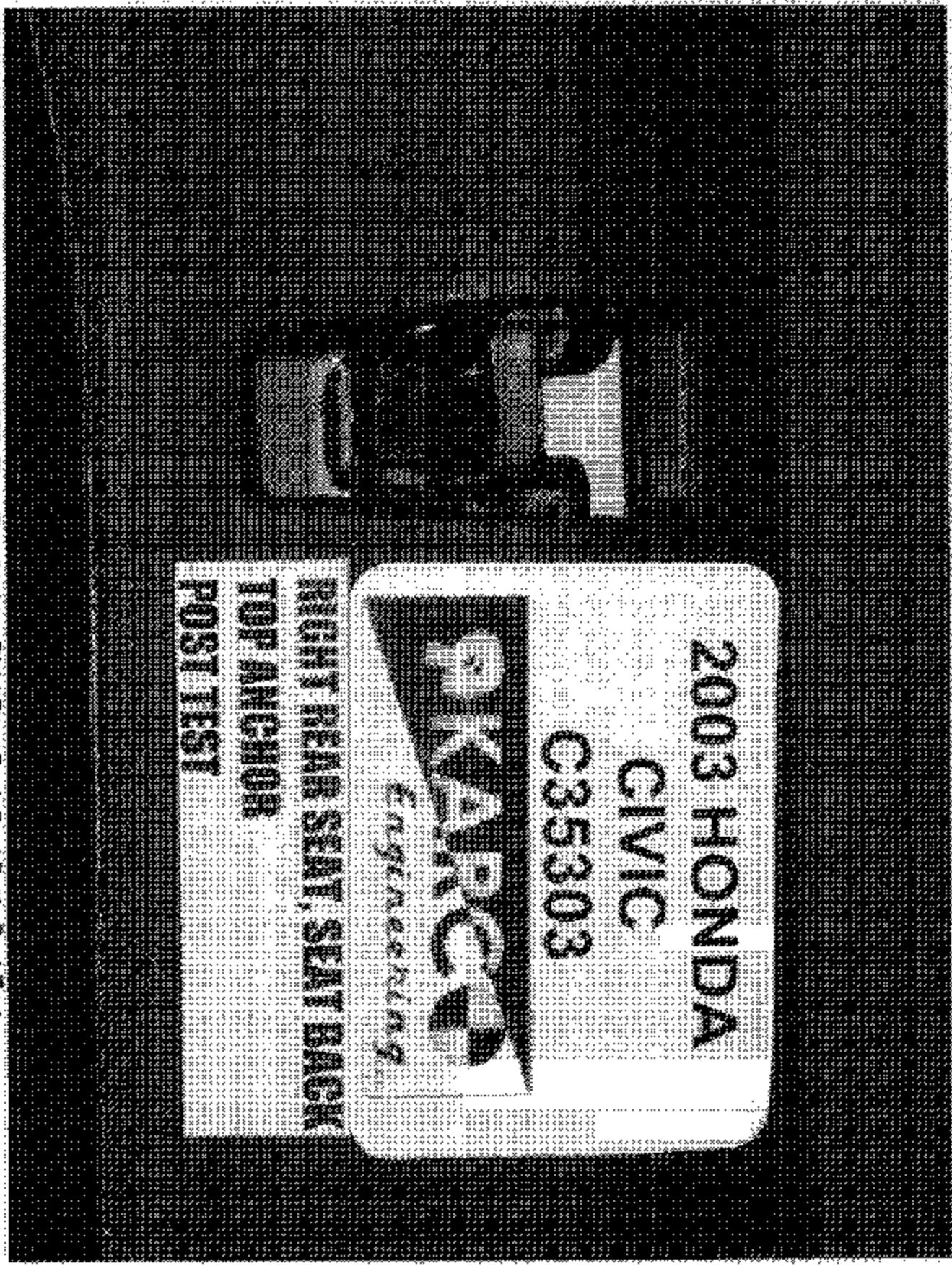


Figure A-128: Floor Pan Anchor, Right Rear Seat, Seat Back, Post-Test

**RIGHT REAR SEAT, SEAT BACK  
TOP ANCHOR  
PRETEST**

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*Engineering*

Figure A-129: Seat Anchor, Right Rear Seat, Seat Back, Pre-Test

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*Engineering*

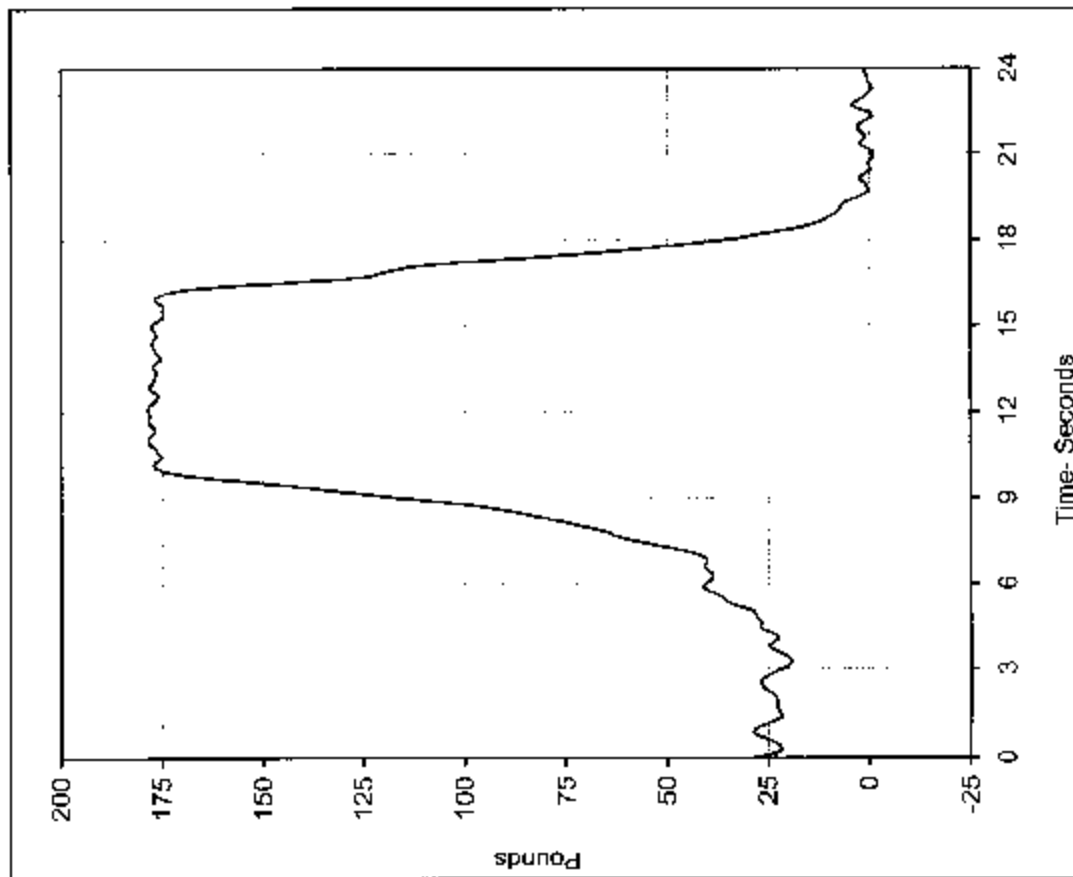
**RIGHT REAR SEAT, SEAT BACK**

**TOP ANCHOR**

**POSTTEST**

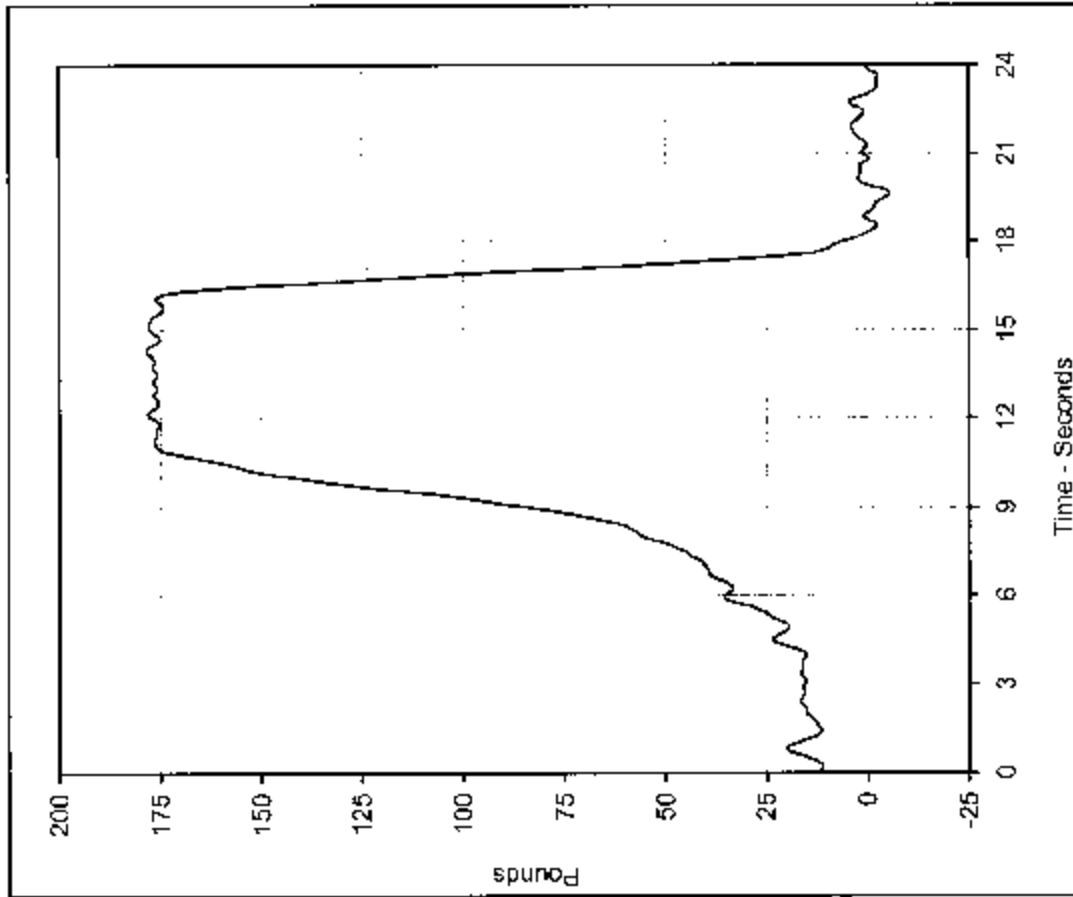
Figure A-130: Seat Anchor, Right Rear Seat, Seat Back, Post-Test

APPENDIX B  
DATA PLOTS



Curve Description		CURNO	Type
Driver Upper X-Member		001	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	178.6	12.1	-2.0	24.5	1



Curve Description		CURNO	Type
Pass. Upper X-Member		002	FIL

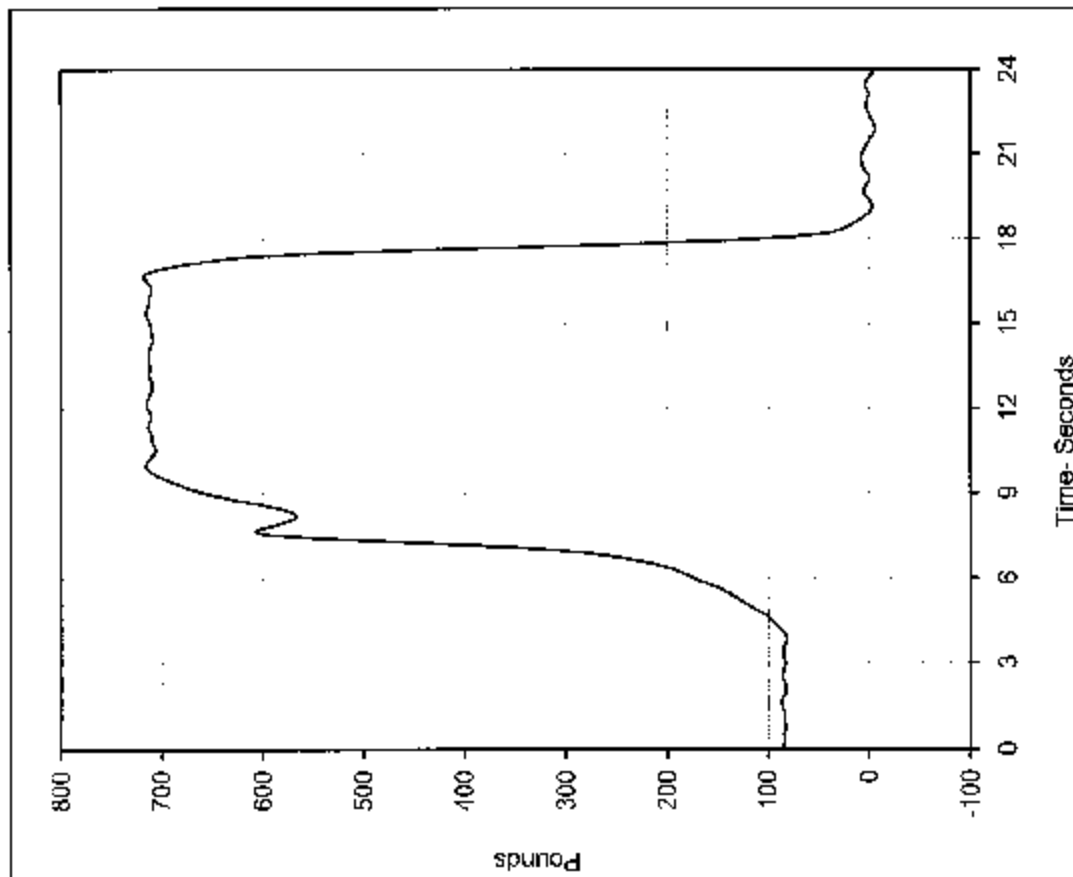
Units	Max	Time	Min	Time	Filter (Hz)
Pounds	178.4	14.3	-5.4	19.6	1

Test Program:  
Test Vehicle:

FMVSS 207 Air Moment (Front)  
2003 Honda Civic DX 2 Door Coupe

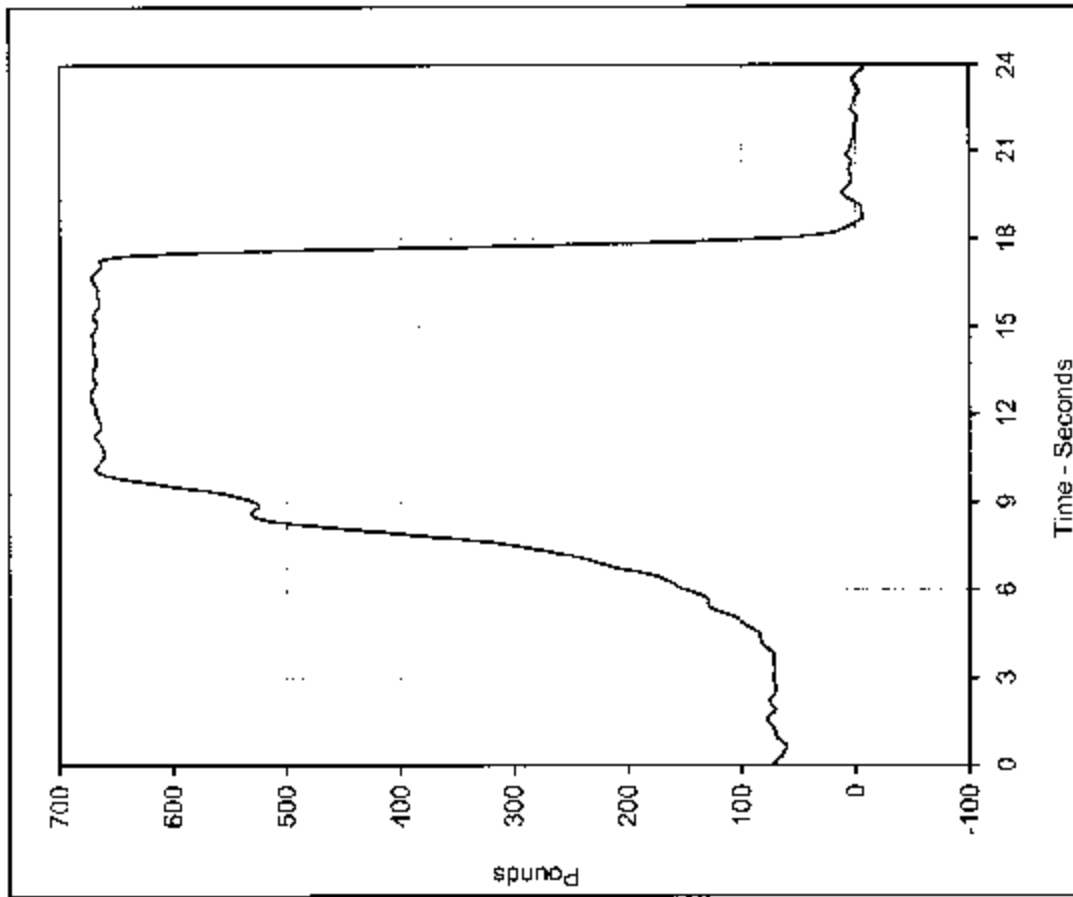
Test Date: 8/18/03  
Project No.: C35303





Curve Description		CURNO	Type
Driver Seat Assembly		001	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	718.1	16.7	-5.9	21.9	1



Curve Description		CURNO	Type
Pass. Seat Assembly		002	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	672.4	12.7	-7.6	24.0	1

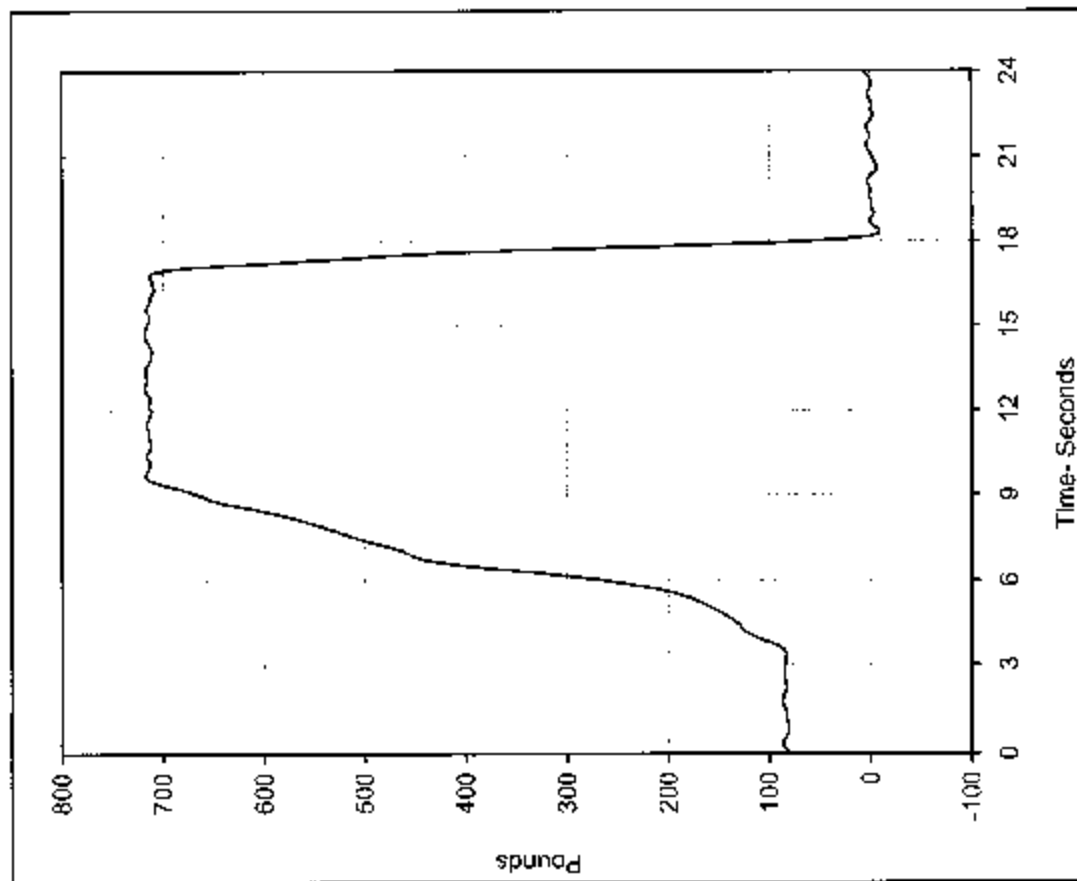
Test Program:  
Test Vehicle:

FMVSS 207 All Seat Frame & Adjusters (Front)  
2003 Honda Civic DX 2 Door Coupe

Test Date: 8/18/03  
Project No.: C35303

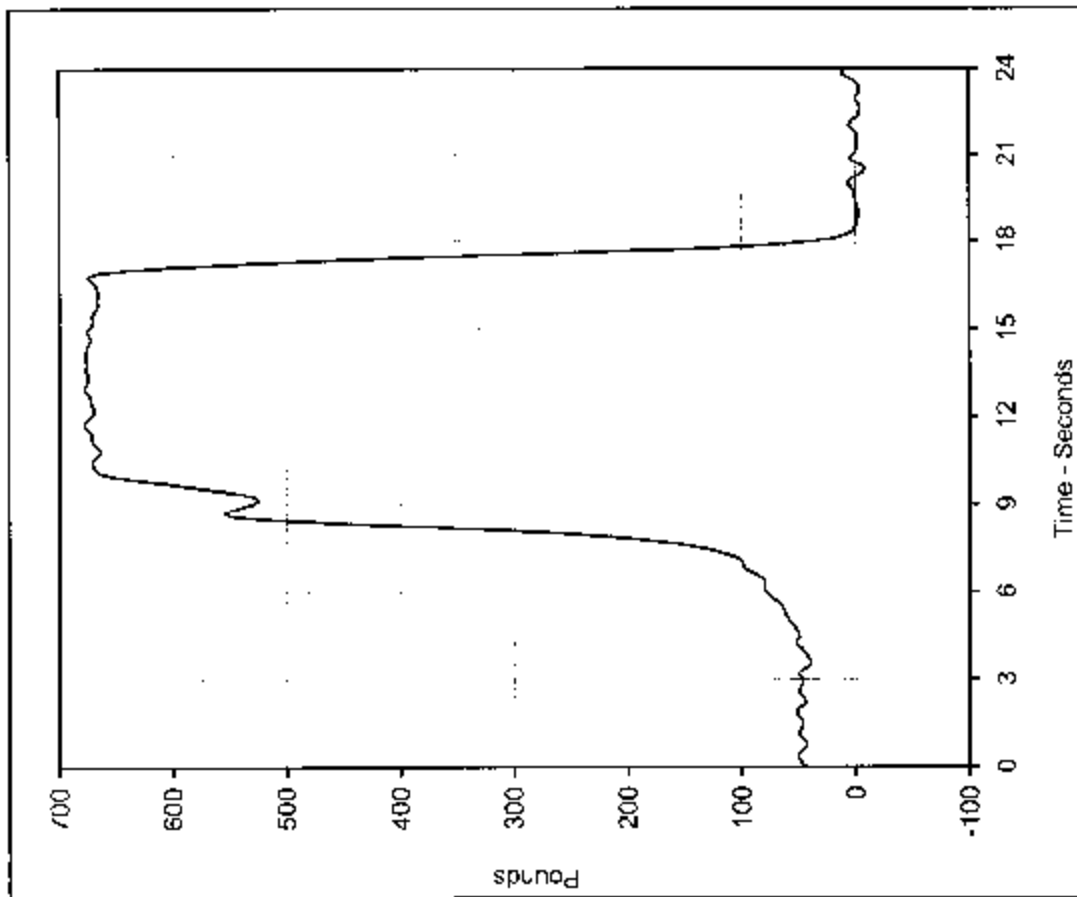






Curve Description	CURNO	Type
Driver Seat Assembly	001	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	718.3	12.9	-8.9	18.3	1



Curve Description	CURNO	Type
Pass. Seat Assembly	002	FIL

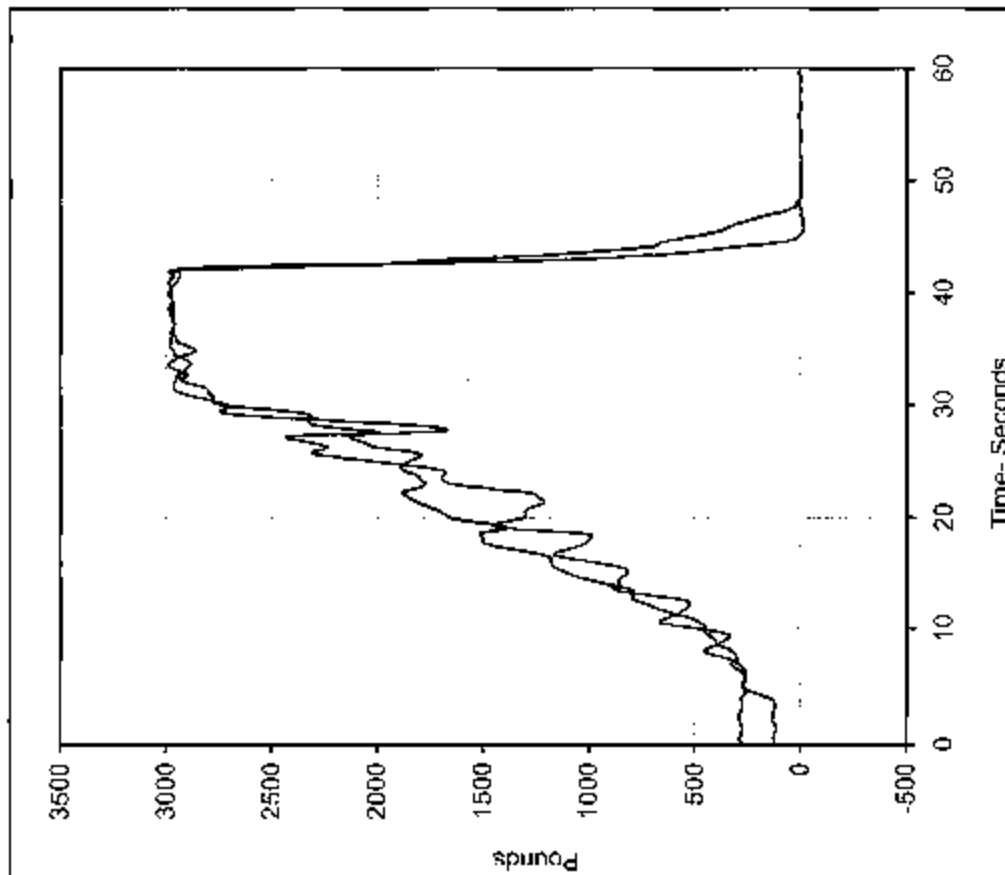
Units	Max	Time	Min	Time	Filter (Hz)
Pounds	677.8	11.8	-7.7	20.5	1

Test Program:  
Test Vehicle:

FMVSS 207 Fwd. Seat Frame & Adjusters (Front)  
2003 Honda Civic DX 2 Door Coupe

Test Date: 8/18/03  
Project No.: C35303

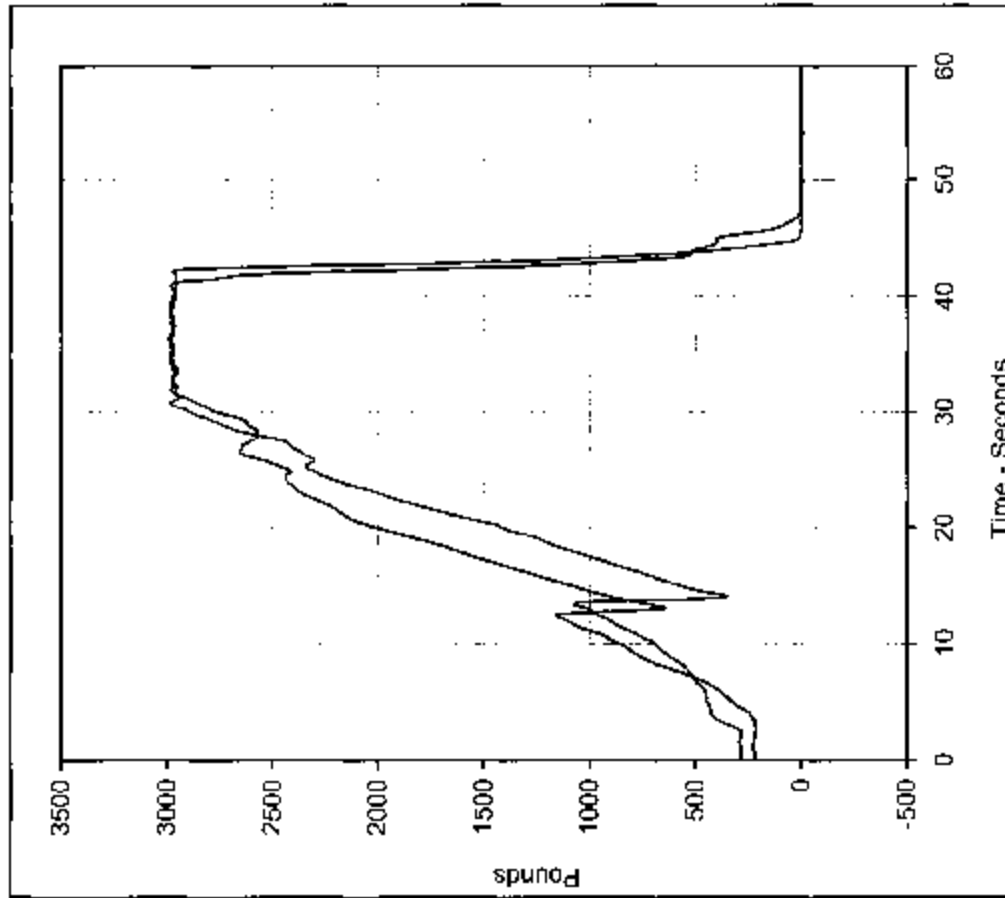




Curve Description	CURNO	Type
Driver Lap Belt Force	001	FIL
Driver Shoulder Belt Force	002	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	2989.5	41.0	-6.1	58.9	1
Pounds	2989.2	38.5	-19.2	45.7	1

Test Program: FMVSS 207/210 Front Seats  
 Test Vehicle: 2003 Honda Civic DX 2 Door Coupe

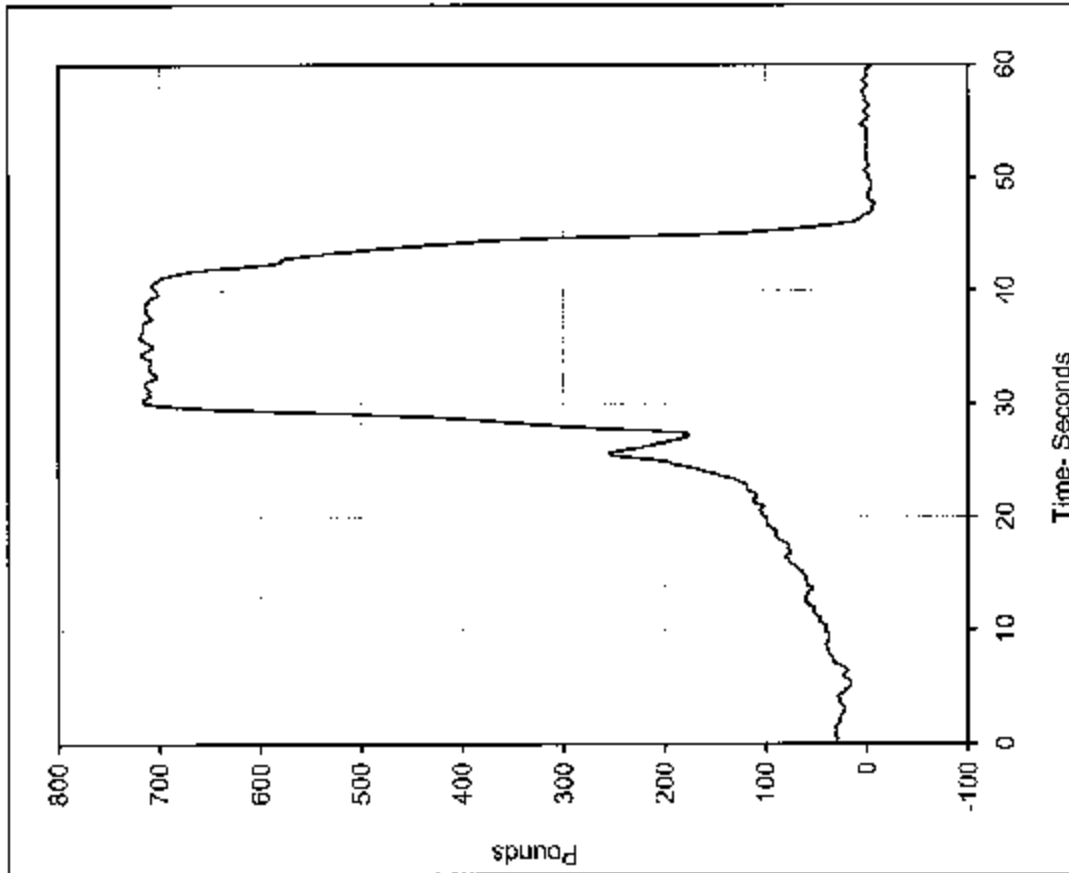


Curve Description	CURNO	Type
Pass. Lap Belt Force	004	FIL
Pass. Shoulder Belt Force	005	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	2987.5	38.9	-5.8	60.0	1
Pounds	2989.7	36.2	-8.5	54.2	1

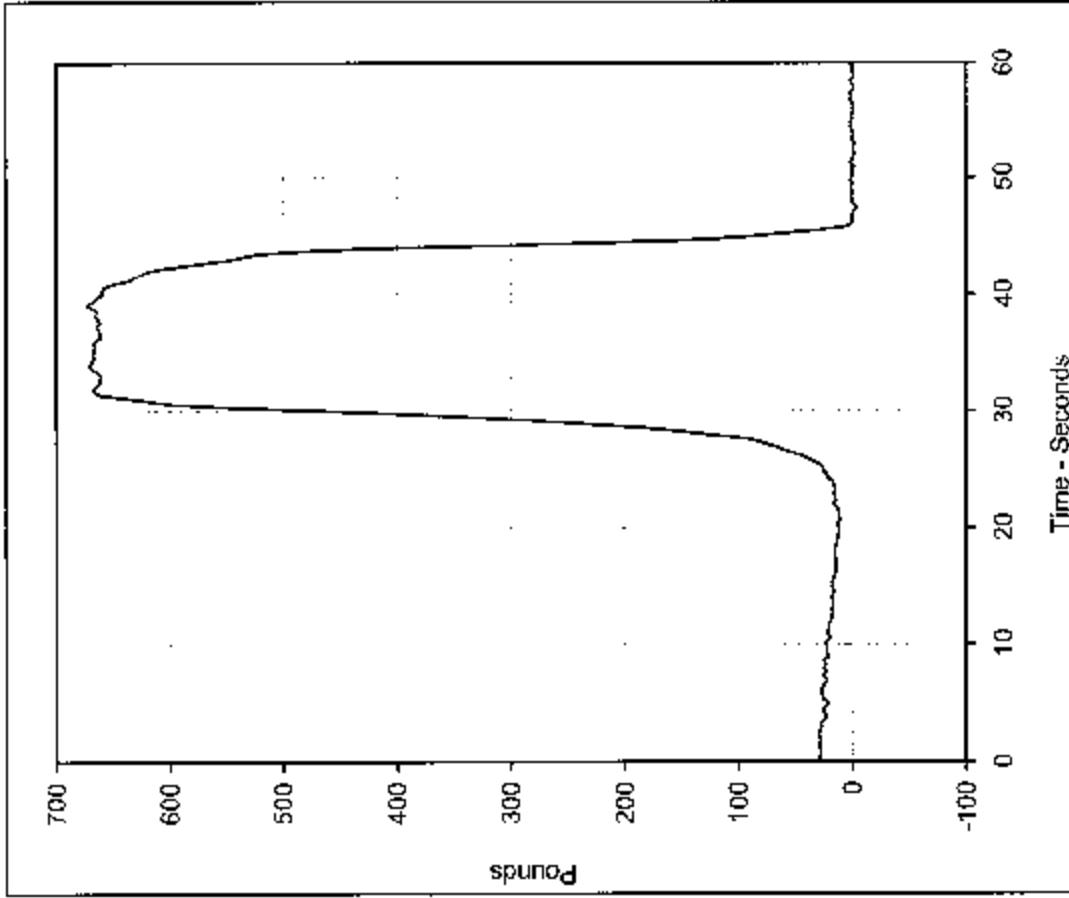
Test Date: 8/19/03  
 Project No.: C35303





Curve Description		CURNO		Type	
Driver Seat Force		003		FIL	

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	719.6	36.0	-7.5	47.6	1



Curve Description		CURNO		Type	
Pass. Seat Force		006		FIL	

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	672.9	39.0	-3.9	47.5	1

Test Program:

FMVSS 207/210 Front Seats

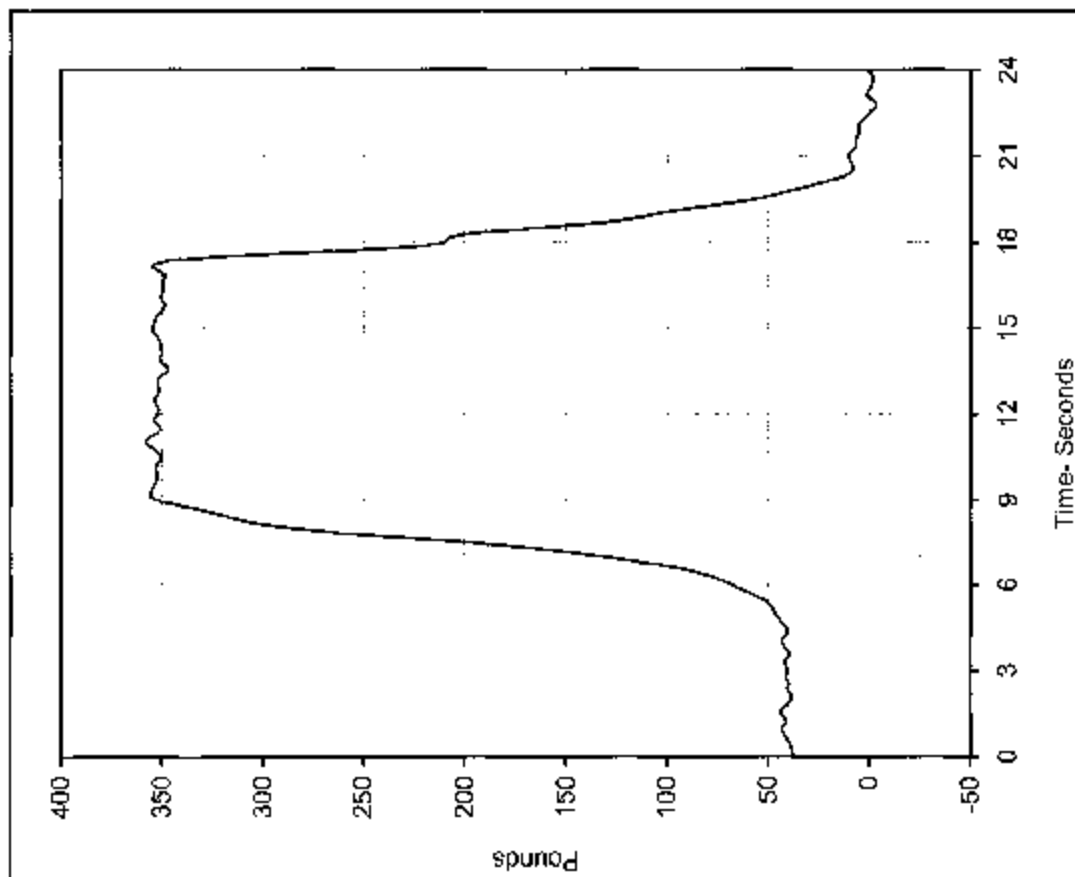
Test Date: 8/19/03



Test Vehicle:

2003 Honda Civic DX 2 Door Coupe

Project No.: C35303



Curve Description	CURNO	Type
Left Rear Pass. Seatback	001	FIL

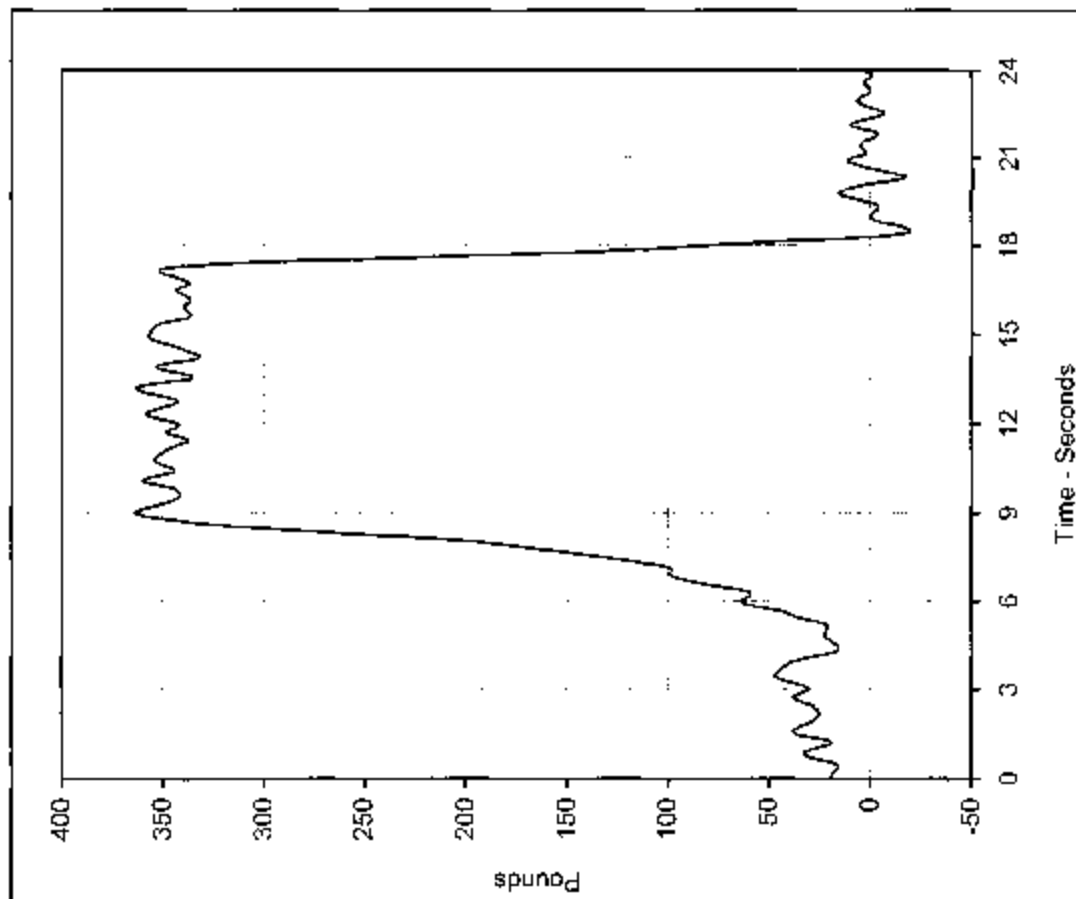
Units	Max	Time	Min	Time	Filter (Hz)
Pounds	357.9	11.0	-7.5	25.0	1

Test Program:

FMVSS 207 Aft Moment (Rear)

Test Vehicle:

2003 Honda Civic DX 2 Door Coupe



Curve Description	CURNO	Type
Right Rear Pass. Seat Back	002	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	363.4	9.0	-32.2	25.0	1

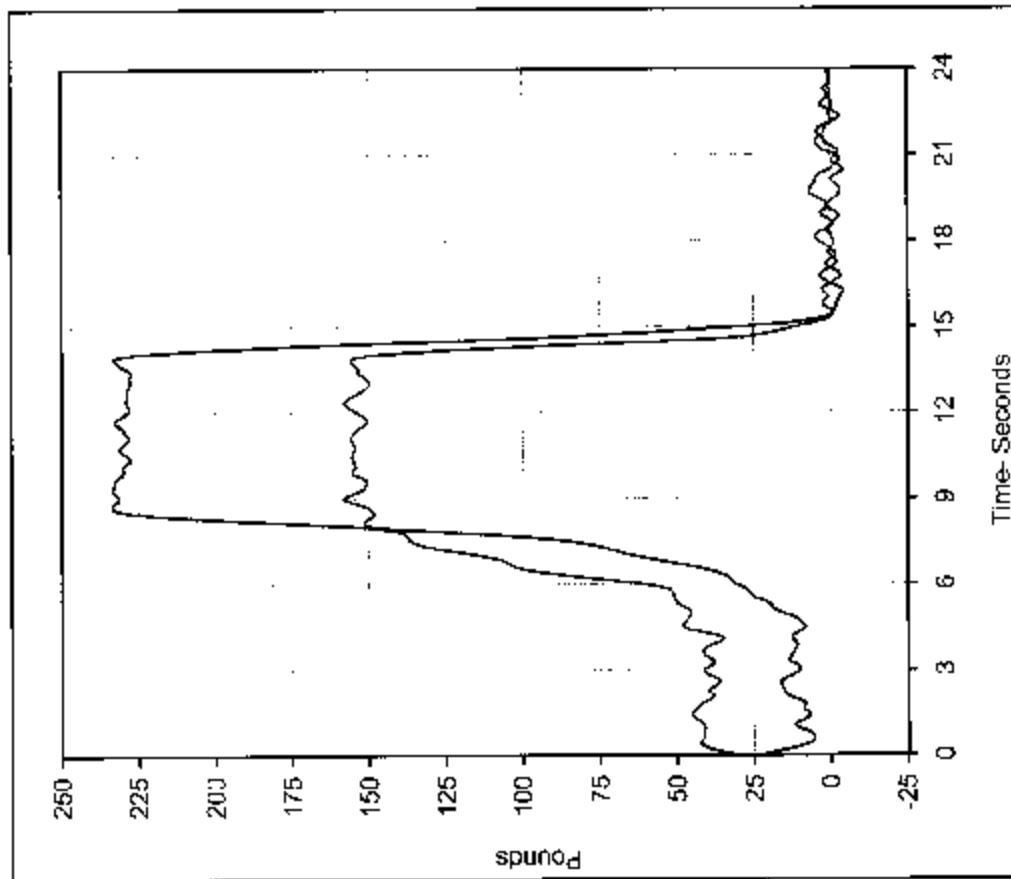
Test Date:

8/19/03

Project No.:

C35303

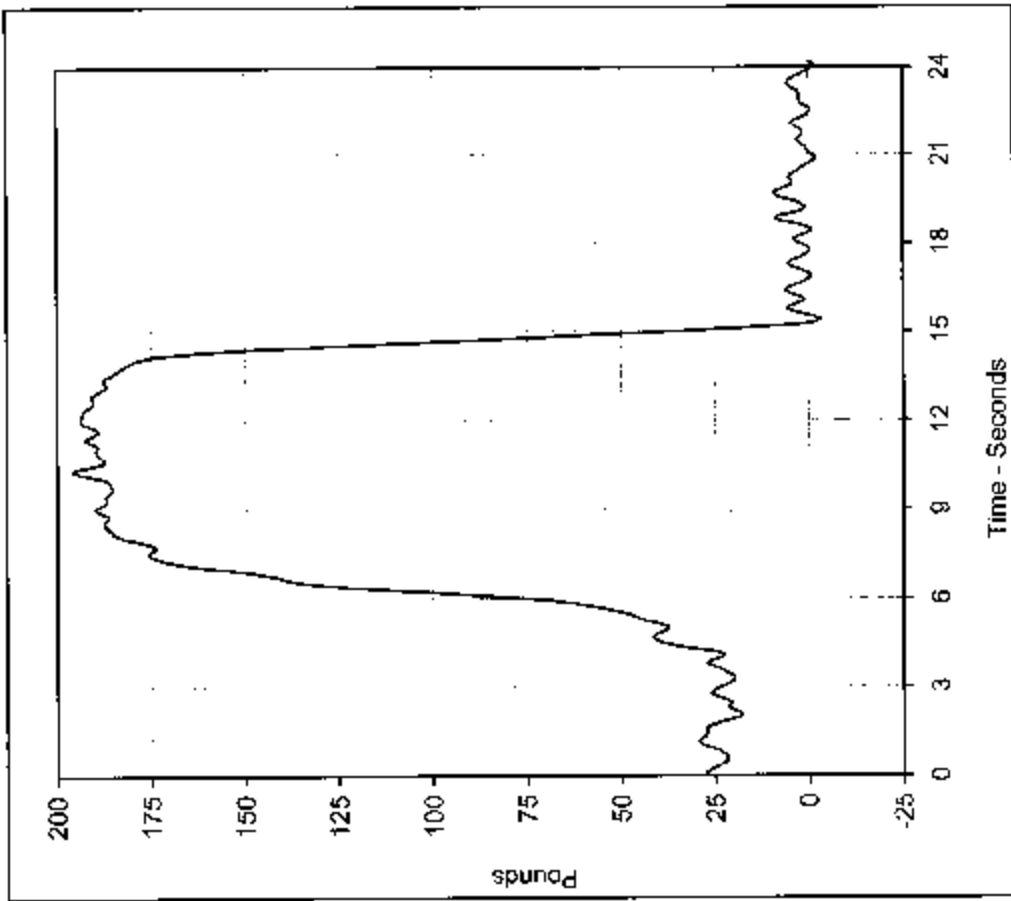




Curve Description	CURNO	Type
Left Rear Pass. Seat Back	001	FIL
Right Rear Pass. Seat Back	002	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	233.7	8.8	-4.6	24.3	1
Pounds	159.1	9.0	-3.3	16.8	1

Test Program: FMVSS 207 Aft Seatback & Seat Cushion (Rear)  
 Test Vehicle: 2003 Honda Civic DX 2 Door Coupe

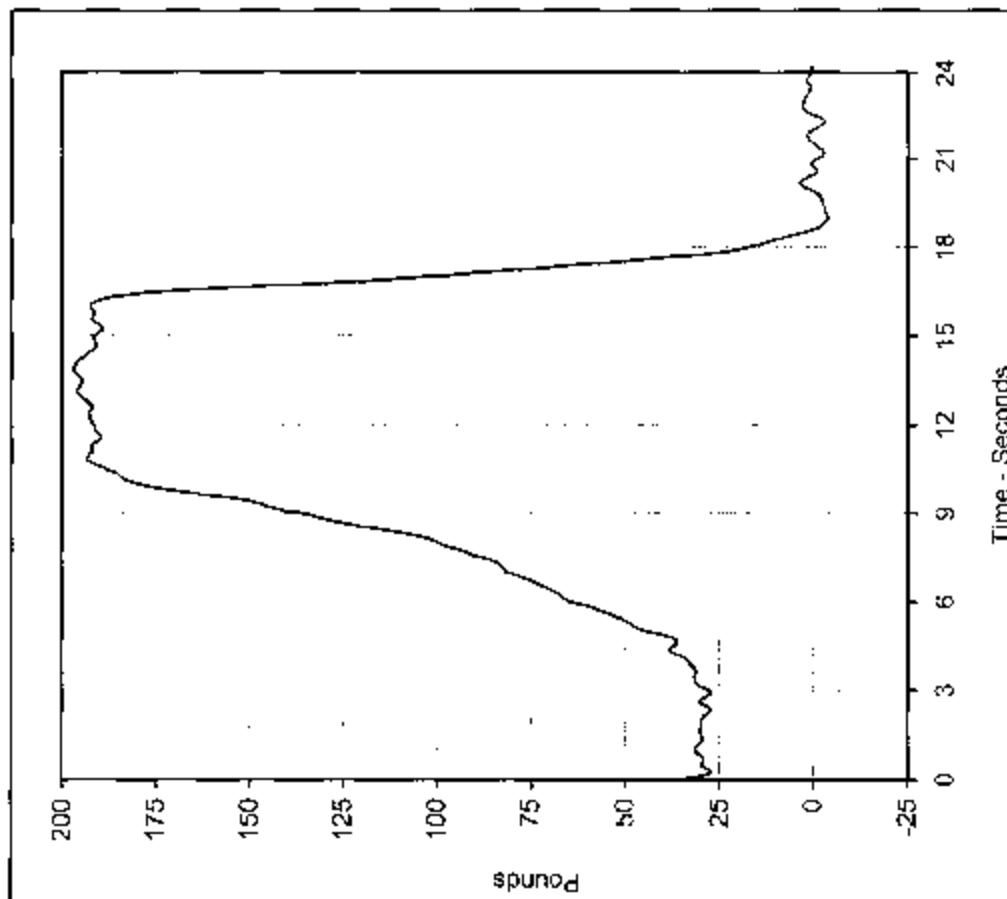
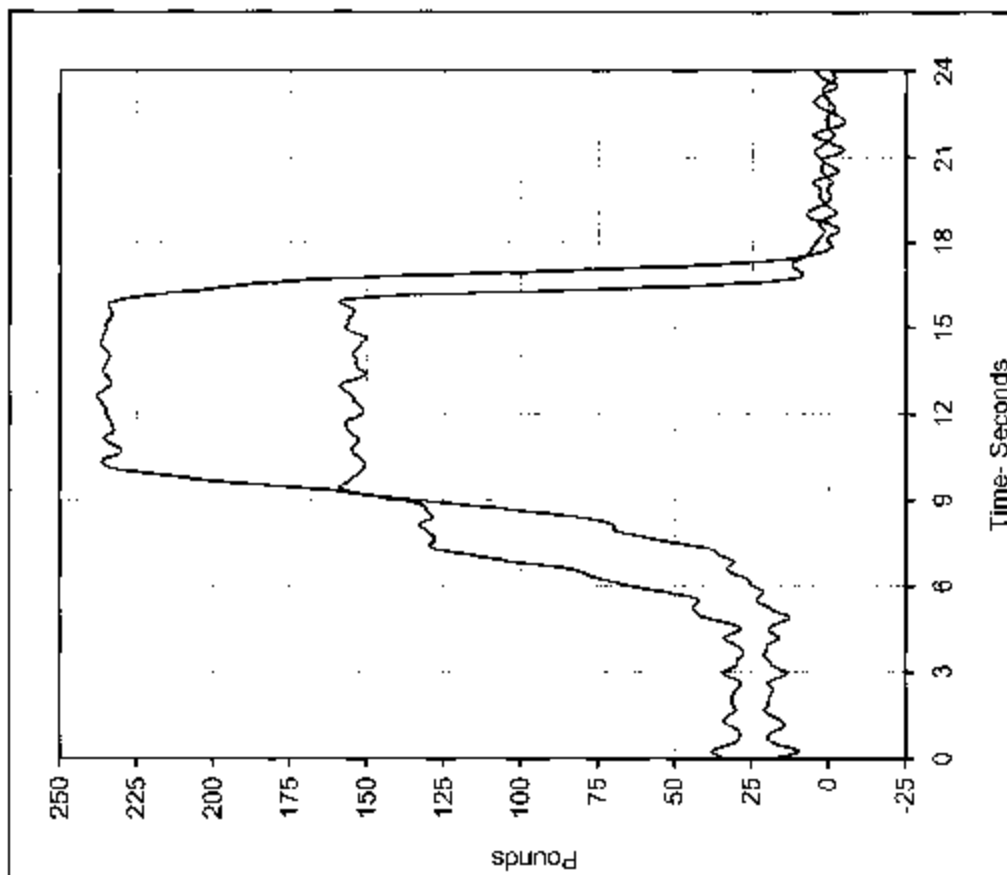


Curve Description	CURNO	Type
Center Rear Pass. Seat Cushion	004	FIL

Units	Max	Time	Min	Time	Filter (Hz)
Pounds	195.7	10.3	-2.9	15.4	1

Test Date: 8/19/03  
 Project No.: C35303





Test Program: FMVSS 207 Forward Seatback & Seat Cushion (Rear)  
 Test Vehicle: 2003 Honda Civic DX 2 Door Coupe

Test Date: 8/19/03  
 Project No.: C35303



APPENDIX C

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

**FMVSS 207**  
**Test Equipment List**  
**8/18/03**  
**2003 Honda Civic DX 2 Door Coupe**

Description	Manufacturer	Model No.	Serial No.	Limit	Accuracy	Cal. Date	Due Cal.
Hydraulic Pump	Lincoln	T-3825-C	2460952	8 gpm @ 2700 psi			
Computer	Panasonic	CF-71	81MAA01852	N/A	N/A	N/A	N/A
TDAS	DTS	TDAS	DM0103	N/A	SAE J211	11/15/02	11/15/03
Load Cell	Lebow	3108	1001	300 LB	± 1.0%	6/2/03	12/1/03
Load Cell	Lebow	3132	622	500LB	± 1.0%	6/2/03	12/1/03
Load Cell	BLH	U3G1	49296	3K	± 1.0%	6/1/03	11/30/03
Load Cell	BLH	U-1C	N873	6K	± 1.0%	6/2/03	12/1/03
Load Cell	BLH	U-1C	11139	12K	± 1.0%	6/2/03	12/1/03
Load Cell	Alinco	342-E	22438-B	10K	± 1.0%	5/30/03	11/28/03
Load Cell	Alinco	342-E	22440-A	10K	± 1.0%	5/30/03	11/28/03
Load Cell	BLH	U3G1	81711A	10K	± 1.0%	6/2/03	12/1/03

